THE

ENTOMOLOGIST'S ANNUAL

FOR

MDCCCLIX.

WITH A COLOURED PLATE.

LONDON:

JOHN VAN VOORST, PATERNOSTER ROW.

MDCCCLXIX.

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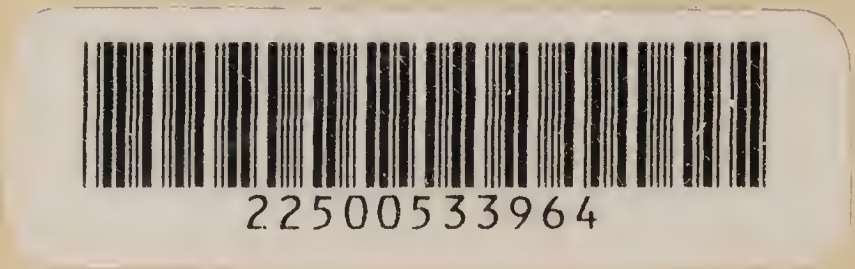
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"In a great town friends are scattered, so that there is not that fellowship, for the most part, which is in less neighbourhoods."

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PREFACE.

HAD any one told us four years ago that in the year 1858 we should have before us a printed list of the names and addresses of 967 British Entomologists, we should certainly have doubted the sanity of our informant. Yet, as our readers will perceive, such a list now exists, and not only so, but that list by no means exhausts the Entomologists resident amongst us. Since it was printed the names of fifteen other Entomologists have reached us—some, no doubt, beginners, but others have been collecting for some time.

One gentleman, of whose existence we were previously unaware, wrote to make some entomological inquiry, and concluded his letter with these words, "As I cannot move out of my room as yet, I amuse myself of an evening by placing my table-lamp in the window, and I have taken some very good things. So, you see, at seventy-four years of age, I am as great an enthusiast as a boy." Hence it is quite possible that many Entomologists who have turned three-score are scattered throughout the country, and their names are not entered in our list.

The Geographical List will no doubt be found highly serviceable; but a considerable drawback is, that these two lists take up so much space (54 pages) that a serious inroad

is made on the space in the Annual available for other purposes.

We have endeavoured to cater for the students of the three best studied orders – LEPIDOPTERA, COLEOPTERA and HYMENOPTERA; but our restricted space has caused all these communications to be rather shorn of their former amplitude.

Dr. Hagen's paper on the British PHRYGANIDÆ is one of so important a nature that we feel no apology is necessary for its length; those who are neither Anglers nor Neuropterists will be glad to see so important a contribution to the elucidation of an interesting, but much neglected, group of insects.

If we have failed to produce as amusing a volume as usual, we hope to be forgiven in consideration of the beauty of the Plate. The central figure, representing an insect quite new to our lists, should do much to impel Entomologists to the south-west of Ireland; but, we trust, those who go will not patronize the steamers, either to Waterford or Cork, as the Dublin Entomologists are looking forward to the arrival in that metropolis of numbers of English Entomologists next year, and are preparing for them that hearty reception so peculiar to the Irish character, and they would feel hurt and disappointed should the English visitors arrive and depart without being welcomed in Dublin.

H. T. STAINTON.

MOUNTSFIELD, LEWISHAM,
December 4th, 1858.

EXPLANATION OF PLATE.

Fig. 1. *Micra parva*, Hübner, see page 147.
2. *Harpella bracteella*, L., see page 152.
3. *Diasemia Ramburialis*, Duponchel, see page 149.
4. *Notodonta bicolora*, Fabricius, see page 146.
5. *Cryptocephalus imperialis*, F., see page 143.
6. *Harpalus servus*, Dufts., see page 122.
7. *Andrena nitida*, Fourc., see page 116.
8. *Hallomenus humeralis*, F., see page 142.
9. *Pentarthrum Huttoni*, Wollaston, Ann. and Mag. Hist. 2nd Ser. xiv. 129 (1854); Ent. Annual for 1855, p. 107.

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LIST OF BRITISH ENTOMOLOGISTS.

ARRANGED ALPHABETICALLY.

1. Adams, Arthur, F.L.S., Brook Cottage, Alverstoke, Hants. *Coleoptera, Hymenoptera and Myriapoda.*
2. Adams, Mrs. Arthur, Brook Cottage, Alverstoke, Hants. *British Coleoptera.*
3. Adams, Ernest, 17, Upper Gower Street, Bedford Square, W. C. *British Coleoptera and Lepidoptera.*
4. Adams, Henry, Hanover Villas, Notting Hill, W.
5. Adamson, John, 15, Stamford Street, Hulme. *British Lepidoptera.*
6. Alington, A. M., Llwyngwern, Machynlleth, North Wales.
7. Allchin, Dr. W. H., 7, Pembridge Villas, Bayswater, W. *British Lepidoptera.*
8. Allen, C. F., Western Terrace, The Park, Nottingham. *Hymenoptera.*
9. Allen, William, Western Terrace, The Park, Nottingham. *Coleoptera and Diptera.*
10. Allis, T. H., York. *British Lepidoptera.*
11. Almond, F., Bedern Bank, Ripon, Yorkshire. *British Lepidoptera.*
12. Almond, G. A., Oliver Street, Birkenhead. *British Lepidoptera.*
13. Anderson, Robert, St. Martin's-le-Grand, Coney Street, York. *British Lepidoptera.*
14. Andrew, C. H., 129, High Street, Cheltenham.
15. Andrews, Percy, 17, Montpelier Villas, Brighton. *British Lepidoptera.*
16. Ansell, Henry, Tottenham, N. *British Lepidoptera.*
17. Archer, F., Jun., 49, Rodney Street, Liverpool.
18. Aris, H., Corporation Row, Clerkenwell, E. C.
19. Arkwright, H., Hampton Court, Leominster. *British Lepidoptera.*

20. Armstrong, T., 10, Barwise Court, English Street, Carlisle. *British Lepidoptera.*
21. Atkins, T. W., High Street, Poole. *British Lepidoptera, &c.*
22. Aubertin, Edmund, 8, Charing Cross, S. W. *British Lepidoptera.*
23. Austin, Henry, Jun., The Hollies, Little Ealing, W. *British Lepidoptera.*

24. Babington, C. C., M.A., F.R.S., F.L.S., F.G.S., St. John's College. Cambridge. *Coleoptera. No longer collects; happy to give information.*
25. Backhouse, William, Shotley Bridge, near Gateshead. *British Lepidoptera.*
26. Baikie, W. B., M.D., F.R.G.S., Haslar Hospital, Gosport. *Coleoptera, Myriapoda and Arachnida.*
27. Baily, W. A., Cirencester.
28. Baker, H., 90, Hatton Garden, E. C. (Glass Tube Maker).
29. Baker, J., 25, Trumpington Street, Cambridge.
30. Baker, Richard, Brockenhurst, New Forest, Hants. *British Lepidoptera.*
31. Baker, William. New Road, Abergavenny.
32. Balding, James, Wisbeach.
33. Baldwin, E. G., Albany House, Barnsbury Park, N. *British Lepidoptera.*
34. Baly, J. S., 13, Southampton Terrace, Kentish Town, N. W. *Exotic Chrysomelidæ and European Hymenoptera.*
35. Banks, E., at Mr. Stubbs', 1, Sadler Street, Durham.
36. Barker, William, Church Fold, Kirkstall, Leeds.
37. Barlow, F., Solicitor, Cambridge.
38. Barnes, S. B., Cavendish House, Sherwood, near Nottingham.
39. Barnwell, J. C., Holford, near Bridgwater.
40. Barrett, C. G., 37, Park Street, Mile End, E.
41. Barrett, J. P., Deaf and Dumb Asylum, Old Kent Road, S. E.
42. Barron, Charles, Museum, Haslar, Gosport. *British Coleoptera, Hymenoptera and Lepidoptera.*
43. Bartlett, Rev. J. P., Exbury Parsonage, near Southampton.
44. Barton, Lieut. Robert, R.E., Stonehouse, Donnybrook, Ireland. *Lepidoptera.*
45. Barton, Stephen, Quay Head Street, Bristol. *British and Foreign Coleoptera.*

46. Barton, W. H., Rev. W. Metcalfe's, Brockdish, Scole, Norfolk.
47. Bateman, H. William, 80, Upper Street, Islington, N. *British and Foreign Lepidoptera and Coleoptera.*
48. Bates, F., 5, Napier Terrace, Aylestone Road, Leicester. *British Coleoptera.*
49. Battersby, H. W., Oakfield, Torquay. *British Lepidoptera.*
50. Battersby, R., M.D., Oakfield, Torquay.
51. Batty, James, 133, South Street, Park, Sheffield. *British Lepidoptera.*
52. Baylie, W. E., Longfleet, near the Turnpike, Poole, Dorsetshire. *British Lepidoptera.*
53. Beadan, C. A., Papworth Everard Rectory, Cambridgeshire. *British Lepidoptera.*
54. Beale, Rev. S. C. Tress, Ivy Court, Tenterden. *British Lepidoptera.*
55. Bedell, G., 10, Gloucester Terrace, Gloucester Road, Bermondsey, S. E. *British Lepidoptera.*
56. Bedford, T., Appleby, Westmoreland. *British Lepidoptera.*
57. Bell, R. J., Reedness, Goole, Yorkshire. *British Lepidoptera.*
58. Bell, Thomas, F.R.S., Pres. L.S., F.G.S., 17, New Broad Street, London, E. C., and Selborne, Hants. *Crustacea.*
59. Berridge, E. W., Buttermarket, Ipswich. *British Lepidoptera and Coleoptera.*
60. Berry, John, Duke Street, Beeston Hill, Holbeck, Leeds.
61. Bewley, Rev. F., Ballymoney, Co. Antrim, Ireland. *Irish Lepidoptera and Coleoptera.*
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63. Bingham, Seymour, Bank, Newnham, Gloucestershire. *British Lepidoptera.*
64. Binning, E., 13, Bartholomew Street, Newbury, Berks.
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66. Birchall, Edwin Howard, Sandford, near Dublin.
67. Birks, Rev. Henry, B.A., Henley-on-Thames. *British Lepidoptera.*
68. Birks, John, 4, Market Street, York.
69. Birt, Jacob, 30, Sussex Gardens, Hyde Park, W., and Broomy Lodge, New Forest, Hants.

70. Bishop, H. S., 1, Catherine Street, Plymouth. *British Lepidoptera.*
71. Bissill, W. K., 6, Brunswick Terrace, Scarborough. *British Coleoptera.*
72. Black, John, 23, Justice Street, Aberdeen.
73. Blackmore, Trovey, Wandsworth, S. W. *British Lepidoptera.*
74. Blackwall, J., F.L.S., Hendre House, Llanrwst. *British Araneidea.*
75. Bladon, J., Pontypool. *Happy to give information.*
76. Blakeley, John, 1, Water Street, Newtown, Manchester. *British Lepidoptera.*
77. Blaker, M. S., Lewes. *British Lepidoptera.*
78. Blandy, C. J., Mill Lane, Reading. *British Lepidoptera.*
79. Blandy, J. F., Mill Lane, Reading. *British Lepidoptera.*
80. Bockett, Rev. B. Bradney, Vicarage, Epsom. *British Lepidoptera.*
81. Boddy, G., 3, Bridge Road, Hammersmith, W. *British Coleoptera and Lepidoptera.*
82. Boggis, Rev. W. R. T., Curate of Lilley, near Luton, Beds.
83. Bold, T. J., Angas Court, Bigg Market, Newcastle-on-Tyne. *British Coleoptera and Aculeate Hymenoptera.*
84. Bolitho, Edw., Arnold Point, No. 3, Cottage Embankment Road, Plymouth. *Coleoptera and Lepidoptera.*
85. Bolt, Henry, Broad Street, Bristol. *British Lepidoptera.*
86. Bolt, John, Broad Street, Bristol.
87. Bond, F., 24, Cavendish Road, St. John's Wood, N. W. *British Lepidoptera.*
88. Bonney, E. S., Churchdale House, Rugeley. *British Lepidoptera.*
89. Bonney, F., Marlborough College, Wilts. *British Lepidoptera.*
90. Bonney, Rev. T. G., 3, Great College Street, Westminster, S. W. *British Lepidoptera.*
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95. Bouchard, Peter, Marling Pit Cottage, Sutton, Surrey, S. *Collects for Entomologists, and sells.*
96. Boulaye, W. Galbois de la, 80, Dover Terrace, Lloyd Street, Greenheys, Manchester.

97. Bowman, Jesse, Stanhope, viâ Darlington.
98. Boyd, Thomas, 17, Clapton Square, N. E. *British Lepidoptera.*
99. Boyle, C., Cressy House, New Road, Hammersmith, W. *British Lepidoptera.*
100. Bradley, Francis, Thompson Square, Portobello Street, Sheffield, Secretary to the Sheffield Entomological Society. *British Lepidoptera.*
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102. Braim, John, Bottoms House, Heckmondwicke, near Leeds. *British Lepidoptera.*
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113. Briars, William, Pocket Rumworth, near Bolton.
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118. Brook, Jonathan, Bramley Moorside, near Leeds.
119. Brown, D. E., 11, St. John Street, Longsight, Manchester.
120. Brown, Edwin, Burton-on-Trent. *British Insects.*
121. Brown, John, Harrobin Mill, near Bolton. *British Lepidoptera.*
122. Brown, J., Westgate, Ripon, Yorkshire, *British Lepidoptera.*
123. Brown, Thomas, 13, King's Parade, Cambridge. *British Lepidoptera.*

124. Browne, Rev. Caulfield, Battle End House, near Brecon. *British Lepidoptera.*
125. Browne, H. W., 1, Westbourne, Street, Hyde Park Gardens, W. *British Lepidoptera and Caleoptera.*
126. Browne, Rev. Thos. Henry, High Wycombe, Bucks.
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128. Bryant, F. C., Plymouth. *British Lepidoptera.*
129. Bryant, J., 16, Edward Street, Shepherd's Walk, London. *British Lepidoptera.*
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131. Buckler, William, Lumley Cottage, Emsworth, Hants.
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133. Bull, E., Mansfield Road, Nottingham. *British Coleoptera.*
134. Bull, W., Darwin Street, Birmingham. *British Coleoptera.*
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137. Burnell, E. H., 32, Bedford Row, London, W. C.
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140. Burns, Robert, 67, Edmond Street, Birmingham.
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142. Buxton, E. C., Daresbury Hall, near Warrington. *British Lepidoptera.*
143. Byrne, W. S., St. Michael's Rectory, Winchester.

144. Cairnes, W., Holgarth Street, Durham. *British Lepidoptera.*
145. Campbell, Charles, 37, Stonehewer Street, Manchester.
146. Campbell, Thomas, Congreve Street, Birmingham.
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149. Canham, Thomas, Jun., 6, John Street, City Road, Cambridge.
150. Carefield, J. G., Newnham, Gloucestershire. *British Lepidoptera.*
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160. Chapman, Thomas, Bothwell Street, Glasgow. *British Lepidoptera.*
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163. Christie, G. G., Frog Hall Cottage, Aberdeen.
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165. Clark, Rev. Hamlet, M.A., 33a, Red Lion Square, Holborn, W.C. *British Coleoptera.*
166. Clark, John, Raglan House, Regent Street, Cheltenham. *British Lepidoptera.*
167. Clark, S., 51, French Gate, Doncaster. *British Lepidoptera.*
168. Clarke, A. H., 18, Kensington Park Gardens, Notting Hill, W.
169. Clarke, C. H. M., 1, Annett's Crescent, Islington, N. *British Lepidoptera.*
170. Clarke, J. and H. B., Low Pavement, Nottingham. *British Coleoptera and Lepidoptera.*
171. Clarke, Mrs. L. L., Woodeaton Rectory, Oxford. *British Diptera.*
172. Clarke, Thomas, Bedern Bank, Ripon.
173. Clarke, William, Holme, near Stilton, Hunts.
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177. Clowes, G. A., Ashbocking Vicarage, Needham Market, Suffolk.
178. Collinson, Francis, 10, Helmet Row, St. Luke's, E.C.

179. Colquhoun, Hugh, M.D., 16, Grosvenor Terrace, Glasgow. *British Lepidoptera.*
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202. Crotch, W. D., Uphill House, Weston-super-Mare.
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204. Crozier, Lieut. H. D., Royal Engineers, Brompton Barracks, Chatham.

205. Crump, Thomas Lacy, Winchcomb. *British Lepidoptera.*
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207. Cubitt, W. Quincey, Ivy Farm, Neateshead, Norwich.
208. Cundall, Robert, Crown Point, Coal Staith, Leeds.
209. Curtis, John, F.L.S., 18, Belitha Villas, Barnsbury Park, London, N. *British Insects of all Orders.*
210. Dale, J. C., F.L.S., Glanville's Wootton, near Sherborne, Dorset. *British Insects.*
211. Dale, W. C., St. Pancras Vicarage, Gordon Square, W. C. *British Lepidoptera.*
212. Dallas, W. S., F.L.S., 23, Crane Grove, Holloway Road, N. *Hemiptera.*
213. Daniell, H., 13, Bedford Row, Barnsbury Street, Islington, N. *British Lepidoptera.*
214. Daniels, J., Lately Common, near Leigh. *British Lepidoptera.*
215. Davis, Edwin, Jun., 8, Victoria Place, Stapleton Road, Bristol. *British Lepidoptera.*
216. Dawson, John, Carron, near Falkirk, Stirlingshire. *British Lepidoptera.*
217. Dawson, J. F., L.L.B., the Woodlands, near Bedford. *British Coleoptera.*
218. Dawson, Samuel Taylor, Botesdale, Suffolk.
219. De La Chaumette, F. T., 9, Gloucester Terrace, West Green Road, Tottenham, N.
220. Denny, Henry, A.L.S., Philosophical Hall, Leeds. *Anoplura and Pselaphidæ. Is now working at Exotic Anoplura.*
221. Desvignes, Thomas, Fir Tree Cottage, Woodford, N. E. *Coleoptera, Lepidoptera and Hymenoptera, especially Ichneumonidæ.*
222. Digby, Henry Somerville, Trinity Hall, Cambridge. *Coleoptera of whole world.*
223. Done, John, J. Hickman's, Esq., Brockton, near Worthen, Salop.
224. D'Orville, H., Alphington, near Exeter. *British Lepidoptera.*
225. Dossetor, T. P., 13, Poultry, E. C. *British Coleoptera and Lepidoptera.*
226. Doubleday, Henry, Epping. *British Lepidoptera.*
227. Douglas, J. W., 6, Kingswood Place, Lee, Kent, S. E. *British Lepidoptera and Coleoptera.*
228. Dove, William, 28, Cross Street, Green Street, Bethnal Green, N. E. *British Lepidoptera. Also purchases insects for sale.*

229. Downie, R., Barnet, Herts. *Observer of Bees.*
230. Drakeford, John, Bromsgrove Street, Birmingham. *British Lepidoptera.*
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232. Draper, W. H., Chichester.
233. Drury, C. D., Grote's Buildings, Blackheath, S. E. *British Lepidoptera.*
234. Dudgeon, R. E., 82, Gloucester Place, Portman Square, W.
235. Duke, F., Brighton College.
236. Duncalfe, Henry, West Bromwich. *British Lepidoptera.*
237. Duncan, John P., Monkton, Ayrshire. *British Lepidoptera and Coleoptera.*
238. Dunning, J. W., Fellow of Trinity College, Cambridge. *British Lepidoptera.*
239. Durrand, J. L. E., Postern Street, Nottingham. *British and French Lepidoptera and Coleoptera.*
240. Dutton, James, 2, Theresa Place, Hammersmith, W. *British Lepidoptera.*

241. Eales, Christopher, 8, King Street, Darlington. *British Lepidoptera.*
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245. Edmondson, Townley, Plymouth Grove, Manchester.
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251. Edwards, W., Pound Hill, Worth, Sussex.
252. Edwards, Rev. Z. J., Axminster, Devon.
253. Egles, Edward Henry, Emmanuel College, Cambridge, and 30, Park Crescent, Brighton.
254. Egles, G. M., 30, Park Crescent, Brighton. *British Lepidoptera.*

255. Eldred, Edward, H. Woburn Cottage, Norwood, Surrey, S. *British Lepidoptera.*
256. Ellerton, John, 3, Park Villas, Hornsey, N.
257. Elliott, J., West Croft, Stanhope, viâ Darlington.
258. Ellis, Hon. Charles, Cookham Deane, Maidenhead. *European Lepidoptera.*
259. Enoch, William, Bath Street, Leamington.
260. Entwistle, Henry, Burnden, Great Lever, Lancashire. *British Lepidoptera.*
261. Evans, Henry, Darley Abbey, near Derby. *British Lepidoptera.*
262. Evans, W. F., Admiralty.

263. Fairlie, Evelyn, Cheveley Park, Newmarket.
264. Fairlie, John, Cheveley Park, Newmarket.
265. Farrow, William, Woburn, Beds.
266. Farren, William, jun., King's Old Gateway, Cambridge. *Collects for sale.*
267. Fawcett, J. K., House of Correction, Kendal. *British Lepidoptera.*
268. Fawkes, F. H., Upton Park, near Slough, Bucks.
269. Fedarb, J., 113, Snargate Street, Dover.
270. Fenton, John, Parkwood Springs, Sheffield.
271. Fey, G. T., 29, York Street, Plymouth. *British Lepidoptera.*
272. Fisher, G., jun., 21, New Church Street, Edgware Road, W. *British Lepidoptera.*
273. Flatman, James, Little Waltham, Chelmsford. *British Lepidoptera.*
274. Floud, T., St. Michael's Rectory, Winchester. *British Lepidoptera.*
275. Fordham, Thomas, Snelsmore Hill East, near Newbury, Berks.
276. Forrest, B. G., Legh Street, Warrington. *British Lepidoptera.*
277. Forington, Jabez, East Stockwith, Gainsboro', Lincolnshire.
278. Fortnum, C. D. E., Stanmore, Middlesex, N. W. *Exotic Insects. Does not now collect.*
279. Fowler, W. N., 35, Bathwick Hill, Bath.
280. Fox, J., Rawson Street, New Basford, near Nottingham. *British Coleoptera and Lepidoptera.*
281. Fox, W. Leedes, Harleston, Norfolk. *British Coleoptera.*
282. Francis, H., Inner Park, Wimbledon, S. W.
283. Francis, Horace, 38, Upper Bedford Place, Russell Square, W. C. *British Lepidoptera.*
284. Francis, P., 1, Essex Court, Temple, E. C. *British Lepidoptera.*

285. Fraser, Finley, Innkeeper, Bolton. *British Lepidoptera.*
286. Freason, G., Ison Green, near Nottingham. *British Lepidoptera.*
287. Fremlin, R. H., Wateringbury, near Maidstone.
288. Fry, Hubert, 18, Medina Villas, Cliftonville, Brighton. *British Lepidoptera.*
289. Fryer, Charles, 83, Rumford Street, Chorlton-on-Medlock, Manchester. *British Lepidoptera and Coleoptera.*
290. Fuller, Rev. A., Kirk Hallam, Ilkeston, Notts. *British Lepidoptera.*

291. Galliers, Thomas, 3, Brenton Street, Liverpool.
292. Galloway, A., Birr Castle, Parsonstown, King's County, Ireland. *British Lepidoptera.*
293. Garland, John, F.L.S., Memb. Wern. Soc., Dorchester. *British Lepidoptera.*
294. Garner, Robert, F.L.S., Stoke-upon-Trent.
295. Garneys, Charles, Bungay, Suffolk. *British Lepidoptera and Coleoptera.*
296. Garneys, W., Bungay, Suffolk. *British Lepidoptera and Coleoptera.*
297. Gascoyne, G., Newark, Notts. *British Lepidoptera.*
298. Gatcomb, John, Wyndham Place, Plymouth. *Collects all Orders. Keeps no Collection.*
299. Gates, William, 13, John Street, Goldsmith's Row, Hackney Road, N. E. *Lepidoptera and Coleoptera.*
300. Gaviller, Augustine, 5, Manor Road, Stamford Hill, N. *British Lepidoptera.*
301. Gaviller, W., 27, Austin Friars, E. C. *British Lepidoptera.*
302. Gedge, Joseph, Bury St. Edmunds. *British Lepidoptera.*
303. Gibbes, Heneage, Sidmouth. *British Lepidoptera.*
304. Gibbs, Herbert, F., 27, Upper Manor Street, King's Road, Chelsea, S. W.
305. Gibson, W. G., 75, High Street, Dumfries, N.B. *British Lepidoptera.*
306. Gilbert, R., 17, Upper Phillimore Place, Kensington, W.
307. Gloyne, C., jun., 5, Terrace, Kensington, W. *Coleoptera.*
308. Goadby, Rev. Jos. J., Market Harborough.
309. Goderich, Viscount, M.P., F.L.S., Carlton Gardens, S. W.
310. Goldney, George, Slough, Bucks. *British Lepidoptera.*
311. Goodall, D. G., 2, Gates, Macclesfield. *British Lepidoptera.*
312. Gordon, Rev. George, Manse of Birnie, by Elgin, N.B.

313. Gore, Rev. H. J., Rusper Rectory. Horsham.
314. Gorham, H. S., 10, Alfred Street. Montpelier Square, Brompton, S. W. *British Lepidoptera.*
315. Gould, Henry, Hampstead Road, Handsworth, Birmingham. *British Lepidoptera.*
316. Gower, W. H., Canbury Field, Kingston, Surrey, S. W. *British Lepidoptera and Coleoptera.*
317. Grace, Thomas, 18, Kirkgate, Wakefield. *British Lepidoptera.*
318. Graham, Edmund, 19, Bolton Street West, Preston. *British Coleoptera.*
319. Graham, G. W., jun., 22, Clarendon Villas, Notting Hill, W.
320. Graham, W. B., Superintendent of Police, Sharnbrook, Beds. *British Lepidoptera.*
321. Grainger, John, A. B., T.C.D., Palatine Club, Liverpool. *British Lepidoptera and Coleoptera.*
322. Grant, Rev. Jos. B., Oxenhope, near Keighley, Yorkshire.
323. Grantham, Henry, Scawley, near Brigg, Lincolnshire. *British Insects.*
324. Gray, John, Wheatfield House, near Bolton-le-Moors.
325. Gray, J. E., Ph. D., F.R.S., V.P.Z.S. &c., British Museum.
326. Gray, R., 3, Oriel Place, Cheltenham.
327. Green, Rev. G. C., Parsonage, Hamworthy, near Poole, Dorsets.
328. Green, John, Messrs. John Hardman, 43, Newhall Hill, Birmingham. *British Lepidoptera.*
329. Green, J., Market Place, Wisbeach.
330. Green, W., Eccleshall New Road, Sheffield. *British Lepidoptera.*
331. Greene, George, Painter, Thorne, Yorkshire. *British Lepidoptera.*
332. Greene, Rev. Joseph, Cubley Rectory, Doveridge Rectory, Derby. *British Lepidoptera.*
333. Greenfield, J. T., Royal Military Academy, Woolwich. *British Lepidoptera.*
334. Greening, Noah, Trafalgar Place, Warrington. *British Lepidoptera.*
335. Greenip, William, Plosh, Keswick, Cumberland.
336. Gregor, Walter, Parochial Schoolmaster, Gowkstanes, Macduff, Banff.

337. Gregory, William, sen., 24, Clandon Street, near South Street, Walworth, S.
338. Gregory, William, jun., 24, Clandon Street, near South Street, Walworth, S.
339. Gregson, C. S., Fletcher Grove, Stanley, near Liverpool. *British Lepidoptera and Coleoptera.*
340. Gregson, William, Lytham. *British Lepidoptera.*
341. Grenfell, J. G., Rugby. *British Lepidoptera.*
342. Grierson, T. B., Surgeon, Thornhill, Dumfriesshire.
343. Griesbach, Rev. A. W., Wollaston, Wellingborough.
344. Griffin, Isaac, 261, Aston Road, Birmingham.
345. Griffith, J. R., Brighton College, Brighton. *British Lepidoptera.*
346. Griffith, Thomas, 4, St. Peter's Place, Brighton.
347. Groggins, James, Port Road, Caldergate, Carlisle. *British Lepidoptera.*
348. Groom, Charles Ottley, 13, Nova Villas, Cliftonville, Brighton. *British Insects, Arachnida and Crustacea.*
349. Groom, Miss S., at G. P. Clay, Esq., Bury St. Edmunds.
350. Grosvenor, R., 11, Skinner Street, Clerkenwell, E. C.
351. Groves, W., 12, Morden Place, Lewisham Road, S. E. *British Lepidoptera and Coleoptera.*
352. Gruggen, Arthur W., Pocklington, Yorkshire. *British Lepidoptera.*
353. Grut, F., 9, King Street, Southwark, S.E. *British Coleoptera and Lepidoptera.*
354. Guise, W. V., F.L.S., Elmore Court, Gloucester.
355. Guyon, G., Richmond, Surrey, S. W., and Ventnor, Isle of Wight. *British Coleoptera.*
356. Gwatkin, R. L., The Park, Milbrooke, near Southampton. *British Lepidoptera and Coleoptera.*
357. Gwynne, H. A., Richmond Villa, St. John's Wood, London, N. W. *British Lepidoptera.*

358. Hadfield, W. P., Newark, Notts. *British Coleoptera.*
359. Hague, Thomas, Dog and Partridge Inn, Staleybridge.
360. Hale, William, W., Ascension House, Montpelier, Bristol.
361. Haliday, A. H., 23, Harcourt Street, Dublin. *British insects, except Lepidoptera.*

362. Hall, Thomas, 75, London Wall, City, E. C.
363. Halpin, Charles, M.D., Cavan, Ireland.
364. Harding, Geo., jun., Stapleton, near Bristol. *British Lepidoptera.*
365. Harding, H. J., York Street, Church Street, Shoreditch, N. E. *British Lepidoptera, Coleoptera, &c. Collects insects for sale; also purchases insects.*
366. Hards, H. Robinson, Royal Victoria Mill, Dartford. *British Lepidoptera.*
367. Hardy, James, Penmanshiel, near Cockburnspath. *British Diptera, Coleoptera, Hemiptera, Homoptera and Hymenoptera.*
368. Hardy, John, 43, Radnor Street, Hulme, Manchester. *Coleoptera and Lepidoptera since* 1834.
369. Hare, N., jun., Liskeard.
370. Hargreaves, William, 9, John Street, Gravesend.
371. Harradence, Richard, Norman's Hill, Royston, Herts.
372. Harrington, H. P., 16, Top of High Street, Colchester. *British Lepidoptera.*
373. Harris, Jos. William, Cockermouth.
374. Harrison, E., 5, Ebenezer Terrace, Plumstead Common, S. E.
375. Harrison, J., 5, Ebenezer Terrace, Plumstead Common, S. E.
376. Harrison, Thomas, 48, Rochester Road, Manchester. *British Lepidoptera.*
377. Harrison, William, Gardener, Borough Gaol, Walton, near Liverpool. *British Lepidoptera.*
378. Harvey, A. S., 4, Sussex Place, Southampton. *British Lepidoptera.*
379. Harvey, George, Baitsbite Sluice, near Cambridge.
380. Harvey, Robert, 5, Portland Terrace, Southampton. *British Lepidoptera.*
381. Harwood, W. H., St. Peter's Street, Colchester. *British Lepidoptera.*
382. Hastings, Sidney, Weston Grove, Thames Ditton, Surrey, and 14, Albemarle Street, London, W. *British Lepidoptera.*
383. Haward, Alfred, Eagle Cottage, Gloucester Road, Croydon Common, S. *British Coleoptera.*
384. Hawker, Rev. W. H., Horndean, Hants. *British Lepidoptera.*
385. Hawley, A., 55, Hall Gate, Doncaster.
386. Hay, Alex. John, Uckfield, Sussex. *British Lepidoptera.*
387. Hayden, Rev. F. W., Skelton Rectory, York.

388. Hayward, W. R., Addington Place, Norwood, S.
389. Head, John D., care of H. Burlingham & Co., Evesham.
390. Healy, Chas., 4, Bath Place, Haggerstone, near Hackney, Middlesex, N. E. *British Lepidoptera.*
391. Hearn, Rev. E. M., Hurst Green Parsonage, near Blackburn.
392. Hellins, Rev. J., St. David's Hill, Exeter. *British Lepidoptera.*
393. Helstrip, Charles, 5, Apollo Street, Heslington Road, near York. *British Lepidoptera.*
394. Hemmings, Thomas, 11, Ann Street, James Street, Globe Fields, N. E.
395. Hensman, Arthur, Spring Hill, Northampton. *British Lepidoptera.*
396. Hepburn, Archibald, Ross, Herefordshire. *British Lepidoptera and Coleoptera.*
397. Hertslet, J. G., 19, Grove Place, Brompton, S. W. *British Lepidoptera.*
398. Hewitson, W. C., Oatlands, Walton-on-Thames, Surrey. *Diurnal Lepidoptera, Exotic and European.*
399. Hey, Rev. William, York. *British Coleoptera.*
400. Heys, Abraham, Grange Road, Accrington.
401. Hicks, J. B., M.D., F.L.S., Tottenham. *British Lepidoptera.*
402. Hicks, W., Cricket Inn, near Sheffield. *British Lepidoptera.*
403. Hill, A. J., 6, Mulgrave Place, Plymouth.
404. Hill, G. N., jun., 2, James Street, Penton Street, Islington, N.
405. Hill, H. W., jun., $8\frac{1}{2}$, William Street, Margaret Street, New River Head, N.
406. Hill, Matthew, Little Eaton, near Derby. *British Lepidoptera.*
407. Hill, Samuel, 2, Anne's Place, Margaret Street, Clerkenwell, E. C. *British Insects of all Orders for sale or exchange.*
408. Hind, J. R., 22, Grove Road, St. John's Wood, N. W. *British Lepidoptera and European Rhopalocera.*
409. Hind, Robert, 24, Gillygate, York. *British Lepidoptera.*
410. Hindley, William, 3, Kirk's Row, Rhodeswell Road, Limehouse, E. *British Lepidoptera, especially Tortricina.*
411. Hislop, Robert, Blair Lodge, by Falkirk, N.B. *British and Foreign Coleoptera.*
412. Hobson, Richard, Selby, Yorkshire.
413. Hodge, George, Seaham Harbour. *British Coleoptera and Lepidoptera.*

414. Hodgkinson, J., Harraby, near Carlisle. *British Lepidoptera.*
415. Hodgkinson, J. B., 11, Bispham Street, Preston. *British Lepidoptera.*
416. Hodgkinson, Thomas, Graystone, off London Road, Carlisle.
417. Hodgson, C. B., Hockley Hill, Birmingham. *British Lepidoptera.*
418. Hogan, Rev. A. R., A.B., T.C.D., Corsham, Wilts. *British Lepidoptera and Coleoptera.*
419. Holcroft, William, Upholland, Wigan, Lancashire.
420. Hollenrake, J., care of T. Mellor, Skircoat Green, near Halifax.
421. Holt, James, Eagley Bank, near Bolton. *British Lepidoptera.*
422. Hood, Robert, M.D., Newington, Edinburgh.
423. Horsfield, Thomas, M. & Ph. D., F.R.S., F.L.S., F.G.S. &c. East India House, E. C. *Insects from Java.*
424. Horton, Rev. E., Littleton House, Lower Wick, Worcester.
425. Hosach, W. J. R., Greenlaw, by Castle Douglas, N.B.
426. Houghton, Rev. W., Child's Ercall, Market Drayton, Shropshire. *British Coleoptera.*
427. House, Samuel, 82, St. James's Street, Brighton. *British Lepidoptera.*
428. Howarth, Thomas, Mottram Road, near Manchester.
429. Huckett, Thomas, 26, Britannia Row, Lower Road, Islington, N.
430. Hudson, F. T., 19, Stockwell Street, Greenwich, S.E. *British Lepidoptera.*
431. Hudson, George, 27, Stansfield Row, Burley, near Leeds.
432. Hume, W., 20, Victoria Road, Kentish Town, N.W.
433. Hunnybun, W. Martin, Chadleigh House, Godmanchester, Huntingdon.
434. Hunter, Miss, of Thurston, Dunbar, N. B.
435. Hunter, James, West Walls, Carlisle. *British Coleoptera and Lepidoptera.*
436. Hunter, John, 16, Robert Street, Hampstead Road, N.W. *British Lepidoptera.*
437. Huskings, C. E., Cromwell Rectory, near Newark, Notts.
438. Hyde, Fred. Osman, Warwick. *Lepidoptera.*
439. Hydes, William, Bagshaw's Buildings, Park Spring, Sheffield.

440. Image, Rev. J., M.A., 127, Eastern Road, Brighton.

441. Inchbald, Peter, Storthes Hall, Huddersfield.
442. Ingall, Thomas, Park Road, Stockwell, S. *British Insects.*
443. Ingall, W., 2, Altorf Cottages, Loughborough Road, Brixton, S. *British Insects.*
444. Ingle, T. W. B., 4, Commercial Street, Huddersfield. *British Lepidoptera.*
445. Isaac, J. C., 10, East Street, Stonehouse. *British Lepidoptera.*
446. Iverach, J. G., Kirkwall. *British Coleoptera and Crustacea.*

447. Jacques, F. V., Myrtle Villa, Ashley Down, Horfield, near Bristol. *British Coleoptera.*
448. James, G. J., 14, Norfolk Place, Swan Lane, Rotherhithe, S. E.
449. Janson, E. W., 61, Gracechurch Street, London, E. C. *Coleoptera.*
450. Jazdowski, Bronislas, 120, Crown Street, Aberdeen. *British Lepidoptera.*
451. Jeffrey, W., Church Street, Guisborough, Yorkshire.
452. Jenner, Herbert, jun., The Limes, Carshalton, Surrey, S. *British Lepidoptera.*
453. Jenyns, Rev. L., M.A., F.L.S., F.G.S., Upper Swainswick, near Bath.
454. Jerrard, F., Long Stratton, Norfolk.
455. Jessop, John, jun., Back of Church, Rawmarsh, Rotherham.
456. Jobson, Henry, Carron, near Falkirk, Stirlingshire. *British Lepidoptera.*
457. Jodrell, Rev. H., Gisleham Rectory, near Wangford, Suffolk.
458. John, Evan, Llantrissant, near Pontypridd.
459. Johnson, E. R., Woodlands, Sidmouth, Devon. *British Lepidoptera.*
460. Johnson, F. P., Woodlands, Sidmouth, Devon. *British Lepidoptera.*
461. Johnson, Rev. J., Denby, near Huddersfield. *British Lepidoptera.*
462. Johnson, Serjeant, Police Station, Old Swan, Liverpool.
463. Johnson, W., 1, Coronation Square, Gas Street, Great Bolton, Lancashire. *British Lepidoptera.*
464. Jones, A., 16, York Place, Fulham Road, Brompton, S.W.
465. Jones, Capt. J. M., Dolarddyn Hall, near Welshpool, Montgomeryshire. *Coleoptera.*

466. Jones, G. W., King's School, Sherborne, Dorsetshire. *British Lepidoptera.*
467. Jones, J. (Gardener), New Hall, Builth, Breconshire.
468. Jones, Theophilus R., 11, Victoria Road, Old Charlton, S. E.
469. Jones, W., 19, Stafford Street, Peckham, S. E.
470. Jordan, C. J. R., Teignmouth, Devon. *British Lepidoptera.*
471. Jordan, Dr., Spring Grove Terrace, Edgbaston, Birmingham. *British Lepidoptera.*
472. Jordan, Wm. Jas., Commercial Schools, Ilminster, Somerset.
473. Josling, James, jun., 8, Nottingham Place, Charlotte Street, Whitechapel, E.

474. Kearley, George, South Grove, Walthamstow, Essex, N. E.
475. Keeley, R. G., 11, Sidney Terrace, Marlborough Road, Chelsea, S. W.
476. Keene, G., 1, Manor Place, Walworth Road, Surrey, S. *British Lepidoptera.*
477. Keet, John, High Street, Ventnor, Isle of Wight. *British Lepidoptera.*
478. Kelsall, Thos., 21, Franchise Terrace, Pendleton, near Manchester. *British Lepidoptera and Coleoptera.*
479. Kemp, J. E., 12, Portland Street, Cheltenham. *British Lepidoptera.*
480. Kenderdine, Frederic, 2, Abercrombie Place, Stretford New Road, Manchester. *European Lepidoptera.*
481. Kendrick, B., Bold Street, Warrington.
482. Kenware, J., 26, Cliff, Lewes. *British Hymenoptera.*
483. Kent, Henry, 31, Willow Walk, Bermondsey, S. E. *British Lepidoptera.*
484. Kershaw, John, Newtown, Altringham, Cheshire. *British Insects.*
485. Key, Edward B., Esq., 3, Arundel Square, Barnsbury Park, Islington, N. *British Coleophora and Lepidoptera.*
486. Kidd, R. C., Edrom House (Ayton), Berwickshire. *British Lepidoptera.*
487. Killingback, H. W., 10, Oldham Place, Bagnigge Wells Road, W. C.
488. Killingbeck, James, Wesleyan Schools, Selby. *British Lepidoptera.*

489. Kinahan, J. R., M.B., T.C.D., Seaview, Donnybrook, Dublin. *British Crustacea to the end of the Decapoda.*
490. King, Edward L., 17, London Road, Lynn.
491. King, George, 85, Lower Union Street, Torquay. *British Coleoptera and Lepidoptera.*
492. King, John, 10½, Hertford Place, Haggerston, N.E.
493. King, Josiah, Lankford Road, Biggleswade.
494. King, Rev. P. Meade, Norton Rectory, Atherstone.
495. King, Robert, 30, Challcot Villas, Haverstock Hill, N.W. *British Lepidoptera.*
496. Kirby, James, Market Street, Ulverstone. *British Lepidoptera.*
497. Kirby, William, South Street, Wandsworth, S. W. *British Lepidoptera.*
498. Kirby, W. F., St. Peter's House, Brighton. *British Insects and Foreign Sphinges.*
499. Knaggs, H. G., 1, Maldon Place, Prince of Wales Road, Kentish Town, N.W. *British Lepidoptera.*
500. Knapp, J. H., Letchforth Rectory, Hitchin. *British Lepidoptera.*
501. Knapp, William, The Lodge, near Corsham, Wilts. *British Lepidoptera; only the Macros.*
502. Knapp, W. H., 21, Lampeter Street, Islington, N. *British Coleoptera.*
503. Knight, F., jun., Melbourne Place, Aston, near Birmingham.
504. Kuper, Rev. C., Trelleck, Monmouth. *British and Exotic Coleoptera.*

505. Labrey, B. B., Manchester. *Exotic Lepidoptera; Rhopalocera only.*
506. Laing, James Arthur, 1, Haddo Villas, Blackheath, S. E. *British Lepidoptera.*
507. Lamb, James, 7, King Street, Perth. *British Lepidoptera.*
508. Lamb, Rev. William, Ednam, by Kelso.
509. Lamb, W. & G., 2, Portsdown Mews, Kilburn Gate, Middlesex, W. *British Lepidoptera.*
510. Lambert, Henry, M.R.C.P., Grammar School, Cheltenham. *British Insects generally.*
511. Lang, W., John Street, Hamilton, Scotland.
512. Langcake, T. H., Oxton, near Birkenhead. *British Lepidoptera.*
513. Langley, W., B.A., Ganarew, Monmouth (Bishop Cosins's Hall, Durham, during Term time). *British Lepidoptera.*

514. Latchford, W. H., 11, Pleasant Row, Lower Road, Islington, N. *British Lepidoptera.*
515. Latchmore, F., 75, High Street, Strood, Kent. *British Lepidoptera.*
516. Lattimer, J., Corporation Road, Carlisle. *British Lepidoptera.*
517. Law, Thomas, 9, Regent Street, Darlington. *British Lepidoptera.*
518. Lawson, Rev. E., Little Barford Rectory, St. Neots.
519. Laycock, William, 154, Bath Street, Sheffield. *British Lepidoptera.*
520. Lea, John Walter, Shepperton, near Chertsey. *British Lepidoptera.*
521. Leatham, James, Wareham, Dorsets. *British Lepidoptera.*
522. Legg, Henry J., 100, Lambeth Walk, Lambeth, S.
523. Legg, Thomas, 100, Lambeth Walk, Lambeth, Surrey, S.
524. Lenny, C. G., 4, Chatham Place, Ramsgate. *British Lepidoptera.*
525. Leslie, David, Gardener, Appleby Castle, Westmoreland.
526. Lethbridge, E., 40, Old Town Street, Plymouth. *British Lepidoptera.*
527. Lewcock, G., 69, High Street, Chatham. *British Lepidoptera.*
528. Lewcock, Henry, Castle Street, Farnham, Surrey.
529. Lewis, George, 6, Kidbrooke Terrace, Blackheath, S.E. *British Coleoptera.*
530. Lighton, Rev. Sir C. R., Bart., Ellastone, Ashborne, Derbyshire.
531. Lineker, S., Pierrepoint Street, Nottingham. *British Lepidoptera.*
532. Lingwood, R. M., M.A., F.L.S., F.G.S., Lyston, near Ross, Herefordshire.
533. Linnell, John, jun., Red Hill, Surrey. *Coleoptera and Lepidoptera.*
534. Linnell, Thomas, Redstone Wood, near Reigate, Surrey. *British Coleoptera and Lepidoptera.*
535. Linton, Charles, 5, Europa Place, John's Row, St. Luke's, E. C. *British Lepidoptera.*
536. Linton, James, Mount Trafford, Eccles, Manchester. *British Lepidoptera and Coleoptera.*
537. Little, Rev. W., Kirkpatrick Juxta. *British Coleoptera and Lepidoptera.*
538. Liversidge, William, 35, Stansfield Row, Burley, Leeds.

539. Lloyd, W. H., 12, Chapel Street, Grosvenor Square, and Barham, near Canterbury.
540. Logan, R. F., Hawthornbrae, Duddingstone, near Edinburgh. *British Lepidoptera.*
541. Longe, J., Springfield House, Ipswich.
542. Lowe, W. F., M.D., Balgreen, Slateford, near Edinburgh. *British Lepidoptera and Coleoptera.*
543. Lubbock, John, F.R.S., F.L.S., High Elms, Farnborough. *Studies Crustacea; especially Entomostroca; has no Collection.*
544. Lucas, Alfred, 125, Park Street, Luton. *British Lepidoptera.*
545. Lumb, G., Kirkgate, Wakefield. *British Lepidoptera.*
546. Lynch, Josiah B., 2, Maldon Place, Prince of Wales Road, Haverstock Hill, London, N.W.

547. Macdonald, S. R., The Villa, Castle Cary, Somersetshire. *British Lepidoptera and Neuroptera.*
548. Machin, William, 35, William Street, Globe Fields, Mile End, E. *British Lepidoptera.*
549. M'Intosh, J., 5, Middle Street, Taunton. *British Lepidoptera.*
550. M'Keand, John H., The Grove, Lowton, near Warrington. *British Lepidoptera.*
551. M'Keand, Robert, The Grove, Lowton, near Warrington. *British Lepidoptera.*
552. Mackie, W. Lewis, Sittingbourne.
553. M'Lachlan, J., Hethersett, near Wymondham, Norfolk.
554. M'Lachlan, Robert, 1, Park Road Terrace, Forrest Hill, S.E. *British Lepidoptera.*
555. Maclaurin, Rev. Robert, Greenfield Cottage, Lerwick, Shetland.
556. Macmorland, John P., The Manse, North Berwick. *Coleoptera, Hymenoptera and Neuroptera.*
558. Madden, W., Gorton, Torquay. *British Lepidoptera.*
557. Madden, H. R., M.D., Brighton. *British Lepidoptera.*
559. Mailer, Daniel, New Road, Town Head, Auchterarder, Perthshire.
560. Main, James, Port Road, Carlisle. *British Lepidoptera.*
561. Major, W., East Grinstead. *British Lepidoptera.*
562. Malham, George, Lear's Yard, Horse Market, Darlington.
563. Manning, John, jun., Market Hill, Cambridge.

564. Mansfield, Richard, 15, Bradford Street, Birmingham.
565. Marris, Robert, Lynn Road, Wisbeach.
566. Marsh, John, Macclesfield.
567. Marshall, Thomas, Trinity Cottage, Leicester. *British Insects of all Orders.*
568. Marshall, Rev. T. A., The College, Cheltenham. *Insects of all Orders.*
569. Marshall, W., 6, Billiter Square, London, E.C.
570. Marston, G., Bedern Bank, Ripon, Yorkshire. *British Lepidoptera.*
571. Martin, E. J., jun., 79, Skinnergate, Darlington. *British Lepidoptera.*
572. Martin, W., Market Place, Trowbridge, Wilts.
573. Mason, Anthony, Grange, Newton in Cartmel. *British Lepidoptera.*
574. Mathews, Murray, A., Merton College, Oxford. *British Lepidoptera.*
575. Mathews, G. F., Raleigh House, Pilton, near Barnstaple. *British Lepidoptera.*
576. May, W., East Grinstead, Sussex.
577. Meade, R. H., Bradford, Yorkshire. *British Arachnida.*
578. Meldrum, T., Millgate, Ripon, Yorkshire. *British Lepidoptera.*
579. Melhuish, G. E., Upper Tooting, Surrey, S. *British Lepidoptera.*
580. Melly, C. P., Liverpool. *Foreign Coleoptera, Swiss, Indian, Australian, African, &c.*
581. Melsom, W., 33, Warren Street, Tottenham Court Road, N.W.
582. Melville, David, 23, West Walls, Carlisle. *British Lepidoptera.*
583. Mercer, Henry William, Spital Square, N.E.
584. Merriman, H. H., 4, Kensington Square, W.
585. Merrin, Jos., 1, Caroline Villas, Falkner Street, Gloucester. *British Lepidoptera.*
586. Metcalfe, W., Woodleigh Vale, St. Mary's Church, Torquay. *British Lepidoptera.*
587. Meyer, Frederick, Sand Street, Birmingham, or Churchill, Handsworth, near Birmingham. *British Lepidoptera.*
588. Meynell, Thomas, Freyerage, Yarm, Yorkshire. *British Insects.*
589. Middleton, Rev. C. H., Wath-upon-Dearne, Rotherham.
590. Midwinter, W. C., St. Michael's Rectory, Winchester.

591. Miller, C., 17, Silurian Terrace, Broke Road, Dalston, N. E. *British Lepidoptera. Tineina only.*
592. Miller, Edw., jun., Bank, Wellington, Somerset.
593. Millingen, Charles, Blair Lodge, Falkirk, N.B. *British Coleoptera.*
594. Minchin, Rev. H. H., Wadham College, Oxford.
595. Mitchell, C. B., Deddington, Oxon.
596. Mitford, Robert, 1, Haverstock Place, Hampstead, N. W. *British Lepidoptera.*
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927. White, F. B. W., Athole Place, Perth.
928. Whitfield, Edwin, Trinity Hall, Cambridge. *British Lepidoptera.*
929. Whittingham, Thomas, Leytonstone, Essex, N. E. *British Coleoptera and Lepidoptera.*
930. Wigglesworth, Robert, 60, Whalley Road, Accrington, Lancashire. *British Coleoptera.*
931. Wignall, John U., Secretary to the Holbeck Entomological Society, Holbeck, Leeds.
932. Wignall, Samuel, 4, Turk's Head Yard, Briggate, Leeds.
933. Wild, W. J., Herne Hill, Camberwell, S. *British Lepidoptera.*

934. Wildman, T., Grove Place, Southampton Street, Camberwell, S. *British Lepidoptera.*
935. Wilkinson, J. N., 47, Stanley Street, Chelsea, S.W.
936. Wilkinson, E., Shittlehope Burn, Stanhope, viâ Darlington.
937. Wilkinson, T., 6, Cliff Bridge Terrace, Scarborough. *British Lepidoptera.*
938. Wilkinson, Rev. Walter G., Fellow of Worcester College, Oxford.
939. Wilkinson, S. J., 7, Jeffrey's Square, St. Mary Axe, London, E.C. *British Lepidoptera.*
940. Willetts, Henry, 63, Edmond Street, Birmingham.
941. Williams, 37, Old Town Street, Plymouth. *Lepidoptera.*
942. Willis, T. W. B., Wick Episcopi, near Worcester. *British Lepidoptera.*
943. Wilson, Andrew, 18, Young Street, Edinburgh. *Scottish Lepidoptera.*
944. Wilson, C. C., 16, Sussex Place, Rotherfield Street, Islington, N.
945. Wilson, James, Zeta Court, William Street, Botchergate, Carlisle. *British Lepidoptera.*
946. Wilson, John, 43½, Castle Street, Aberdeen.
947. Wilson, Junius, 149, Kirkgate, Wakefield. *British Lepidoptera.*
948. Wilton, E. R., High Street, Ely. *British Lepidoptera.*
949. Winchester, C., Osborne, Isle of Wight. *British Lepidoptera.*
950. Wingfield, L., Keston, near Maidstone, Kent.
951. Winter, John N., Sussex County Hospital, Brighton. *British Lepidoptera.*
952. Winter, William, National School, Aldeby, Beccles. *British Insects of all Orders, except Hymenoptera.*
953. Wollaston, T. V., M.A., F.L.S., 10, Hereford Street, Park Lane, W. *Coleoptera.*
954. Wood, C., Dulwich Common, S. *British Lepidoptera.*
955. Wood, John, Framwellgate, Gate Bridge, Durham.
956. Wood, Henry, Danesfield Gardens, Marlow. *British Lepidoptera.*
957. Wood, F. W., jun., Hampton House, Luton Road, Chatham. *British Lepidoptera.*
958. Woodage, Andrew, 9, East Street, Goldsmith Row, Hackney Road, N.E.
959. Woods, S. E., Westleton, Saxmundham. *British Lepidoptera.*

960. Wright, Dr. E. Percival, (Hon. Sec. Dub. Univ. Zoolog. and Bot. Assoc.), 5, Trinity College, Floraville, Eglinton Road, Dublin, Ireland. *British Coleoptera and Hymenoptera.*

961. Wright, R. W., 4, Gloucester Terrace, Victoria Park Road, N. E. *British Lepidoptera.*

962. Young, James, 11, Bishop Lane, Hull. *British Lepidoptera.*

963. Young, Morris, 7, Old Sneddon Street, Paisley. *British Coleoptera and Lepidoptera.*

964. Young, Reginald and Edward, Hill House, Farnworth, near Warrington.

965. Young, S. W., 12, Portland Street, Cheltenham. *British Coleoptera and Lepidoptera.*

966. Yuill, Rev. James, Peterhead, N. B.

967. Zachary, Henry, jun., Cirencester.

LIST OF BRITISH ENTOMOLOGISTS,

ARRANGED GEOGRAPHICALLY.

Note.—It has been thought unnecessary to increase the bulk of this List by including those residing within the London District—so that to speak more correctly this is only a "List of *Provincial* British Entomologists."

The counties and the towns in each county are arranged alphabetically. The nearest town to the Entomologist's residence is that indicated, but by referring to the preceding Alphabetical List the reader will ascertain the precise address and the *spécialité* of any individual.

Wales, Scotland and Ireland are treated as single counties, and placed at the end of this List.

BEDFORDSHIRE.

BEDFORD.
217. Dawson, J. F.
861. Thynne, J. C.

BIGGLESWADE.
493. King, Josiah.

LUTON.
82. Boggis, Rev. W. R. T.
544. Lucas, Alfred.

SHARNBROOK.
320. Graham, W. B.

WOBURN.
265. Farrow, William.

BERKSHIRE.

MAIDENHEAD.
258. Ellis, Hon. C.

NEWBURY.
64. Binning, E.
275. Fordham, T.
721. Roake, J. W.

READING.
78. Blandy, C. J.
79. Blandy, J. F.
661. Philbrick, G.
662. Philbrick, T.

WINDSOR.
888. Tyrer, R., jun.

BUCKINGHAMSHIRE.

GREAT MARLOW.

767. Shaw, Wm.
782. Smith, Rev. Bernard.
874. Trotter, C. T. G.
956. Wood, Henry.

HIGH WYCOMBE.

126. Browne, Rev. T. H.

SLOUGH.

141. Butterfield, Rev. H.
268. Fawkes, F. H.
310. Goldney, George.

WAVENDON.

138. Burney, Rev. H.

CAMBRIDGESHIRE.

CAMBRIDGE.

24. Babington, C. C.
29. Baker, J.
37. Barlow, F.
53. Beadon, C. A.
123. Brown, Thomas.
148. Canham, T. J.
149. Canham, T., jun.
222. Digby, H. S.
238. Dunning, J. W.
253. Egles, E. H.
266. Farren, W., jun.
379. Harvey, George.
563. Manning, John, jun.
692. Prime, J.
761. Sealy, A. F.
802. Sprague, T. B.
860. Thurnell, Charles.
928. Whitfield, Edwin.

ELY.

948. Wilton, E. R.

NEWMARKET.

263. Fairlie, Evelyn.
264. Fairlie, John.
643. Page, F., jun.
898. Wagstaff, E.

CAMBRIDGESHIRE—*continued.*

WISBEACH.

32. Balding, James.
329. Green, J.
565. Marris, Robert
638. Oliver, George.
657. Peckover, Alexander.

CHESHIRE.

BIRKENHEAD.

12. Almond, G. A.
117. Brockholes, J. F.
512. Langcake, T. H.
912. Warrington, John.

BOWDON.

243. Edleston, R. S.
484. Kershaw, John.

CHESTER.

904. Walker, Alfred O.

CREWE.

851. Thompson, William.

LISCARD.

186. Cooke, Nicholas.

MACCLESFIELD.

311. Goodall, D. G.
566. Marsh, John.

CORNWALL.

LISKEARD.

369. Hare, N., jun.

TRURO.

886. Tweedy, William, jun.

CUMBERLAND.

CARLISLE.

20. Armstrong, T.
347. Groggins, James.
414. Hodgkinson, J.
416. Hodgkinson, Thomas.
435. Hunter, James.

CUMBERLAND—*continued.*

CARLISLE—*continued.*

516. Lattimer, J.
560. Main, James.
582. Melville, David.
846. Thomlinson, John.
945. Wilson, James.

COCKERMOUTH.

373. Harris, J. W.

KESWICK.

335. Greenip, Wm.

WHITEHAVEN.

627. Nicholson, H. J.

DERBYSHIRE.

ASHBORNE.

530. Lighton, Rev. Sir C. R., Bart.

DERBY.

195. Cox, W.
242. Eaton, James.
261. Evans, Henry.
332. Greene, Rev. J.
406. Hill, Matthew.
811. Statham, William.

UTTOXETER.

801. Spilsbury, Rev. F. M.

DEVONSHIRE.

AXMINSTER.

252. Edwards, Rev. Z. J.

BARNSTAPLE.

575. Mathews, G. F.
897. Wadham, A.

BIDEFORD.

94. Bostock, Rev. G. J.
723. Roberts, L.

DEVONSHIRE—*continued.*

COLLUMPTON.

764. Selwood, Rev. J. B.

EXETER.

224. D'Orville, H.
392. Hellins, Rev. J.
629. Norcombe, E. S.
646. Parfitt, Edward.

PLYMOUTH.

70. Bishop, H. S.
84. Bolitho, E.
128. Bryant, F. C.
271. Fey, G. T.
298. Gatcomb, John.
403. Hill, A. J.
445. Isaac, J. C.
526. Lethbridge, E.
703. Randall, J.
706. Reading, J. J.
735. Rogers, C.
744. Ryder, J. B.

SIDMOUTH.

303. Gibbes, H.
459. Johnson, E. R.
460. Johnson, F. P.

TEIGNMOUTH.

470. Jordan, C. J. R.

TORQUAY.

49. Battersby, H. W.
50. Battersby, R.
491. King, George.
558. Madden, W.
586. Metcalfe, W.
816. Stewart, R. M.

DORSETSHIRE.

BLANDFORD.

664. Pickard-Cambridge, O.

DORCHESTER.

293. Garland, John.

DORSETSHIRE—*continued.*

POOLE.

21. Atkins, T. W.
52. Baylie, W. E.
136. Burnand, W. W.
164. Churchill, J.
327. Green, Rev. G. C.
873. Travers, F.

SHERBORNE.

210. Dale, J. C.
466. Jones, G. W.

WAREHAM.

521. Leatham, James.

WEYMOUTH.

653. Payne, Mrs.
689. Pretor, A.

DURHAM.

BISHOP WEARMOUTH.

608. Morris, Beverley, R.

DARLINGTON.

97. Bowman, Jesse.
241. Eales, Christopher.
257. Elliott, J.
517. Law, Thomas.
562. Malham, George.
571. Martin, E. J., jun.
640. Orde, Jonathan.
644. Page, John.
751. Sang, John.
936. Wilkinson, E.

DURHAM.

35. Banks, E.
135. Bungey, T. J.
144. Cairnes, W.
648. Park, Mungo.
694. Proctor, W., jun.
955. Wood, John.

GATESHEAD.

25. Backhouse, William.

DURHAM—*continued.*

SEAHAM.

413. Hodge, George.

ESSEX.

CHELMSFORD.

273. Flatman, James.
779. Skeels, S. C.

COLCHESTER.

151. Carter, J.
372. Harrington, H. P.
381. Harwood, W. H.

EPPING.

226. Doubleday, Henry.
668. Piffard, B.

GLOUCESTERSHIRE.

BRISTOL.

45. Barton, Stephen.
85. Bolt, Henry.
86. Bolt, John.
101. Braikenridge, Rev. G. W.
197. Cracknell, James.
199. Crawfurd, J. B.
215. Davis, Edwin, jun.
360. Hale, W. W.
364. Harding, G. jun.
447. Jacques, F. V.
621. Naish, Arthur.
895. Vaughan, P. H.
901. Walcott, W. H. L.
922. Weston, William.

NEWNHAM.

63. Bingham, S.
150. Carefield, J. G.
193. Cowmeadow, Jas. jun.

CHELTENHAM.

14. Andrew, C. H.
130. Brydges, C. E.
166. Clark, John.
181. Comyn, W. H.

GLOUCESTERSHIRE—*continued.*

CHELTENHAM—*continued.*

205. Crump, T. L.
326. Gray, R.
479. Kemp, J. E.
510. Lambert, Henry.
568. Marshall, Rev. T. A.
684. Prentice, C.
784. Smith, Edwin.
877. Trye, R. E.
925. Wheeler, E.
965. Young, S. W.

CIRENCESTER.

27. Baily, W. A.
967. Zachary, Henry, jun.

GLOUCESTER.

354. Guise, W. V.
583. Merrin, Joseph.

WOTTON-UNDER-EDGE.

659. Perkins, C. M.

HAMPSHIRE.

ALVERSTOKE.

1. Adams, Arthur.
2. Adams, Mrs. Arthur.

BEMBRIDGE, ISLE OF WIGHT.

602. More, A. G.

EMSWORTH.

131. Buckler, Wm.

FRESHWATER, ISLE OF WIGHT.

737. Rogers, H.

GOSPORT.

26. Baikie, W. B.
42. Barron, Charles.

HORNDEAN.

384. Hawker, Rev. W. H.

HAMPSHIRE—*continued.*

NEW FOREST.

30. Baker, Richard.
69. Birt, Jacob.

OSBORNE, ISLE OF WIGHT.

949. Winchester, C.

PORTSMOUTH.

714. Richards, P. S.

RYDE, ISLE OF WIGHT.

598. Moon, J. F.

SELBORNE.

58. Bell, Thomas.

SOUTHAMPTON.

43. Bartlett, Rev. J. P.
356. Gwatkin, R. L.
378. Harvey, A. S.
380. Harvey, Robert.
633. Oakley, A. C. jun.
671. Pinnock, J. D.

VENTNOR, ISLE OF WIGHT.

355. Guyon, G.
477. Keet, John.

WHIPPINGHAM, ISLE OF WIGHT.

693. Pristo, J.

WINCHESTER.

143. Byrne, W. S.
274. Floud, T.
590. Midwinter, W. C.
920. Wesley, J. S.

HEREFORDSHIRE.

LEOMINSTER.

19. Arkwright, H.

ROSS.

396. Hepburn, Archibald.
532. Lingwood, R. M.
698. Purchas, A. J.

HERTFORDSHIRE.

BARNET.

229. Downie, R.

HITCHIN.

500. Knapp, J. H.

ROYSTON.

371. Harradence, Richard.

HUNTINGDONSHIRE.

GODMANCHESTER.

433. Hunnybun, W. Martin.
670. Pinder, Rev. George.

HOLME.

173. Clarke, William.

ST. NEOTS.

518. Lawson, Rev. E.
719. Rix, Joseph.

KENT.

ASHFORD.

743. Russell, A.

CANTERBURY.

194. Cox, Capt. C. J.
539. Lloyd, W. H.

CHATHAM.

158. Chaney, W. C.
204. Crozier, Lieut. H. D.
515. Latchmore, F.
527. Lewcock, G.
887. Tyrer, John, jun.
957. Wood, F. W. jun.

DARTFORD.

366. Hards, H. R.

DOVER.

269. Fedarb, J.

FARNBOROUGH.

543. Lubbock, John.

KENT—*continued.*

FAVERSHAM.

821. Stowell, Rev. H. A.

GRAVESEND.

370. Hargreaves, Wm.

MAIDSTONE.

287. Fremlin, R. H.
950. Wingfield, L.

TENTERDEN.

54. Beale, Rev. S. C. T.

TUNBRIDGE.

770. Shepherd, R.

RAMSGATE.

524. Lenny, C. G.
880. Turnbull, R. T.

SEVENOAKS.

810. Stanhope, Hon. E.

SITTINGBOURNE.

552. Mackie, W. L.

LANCASHIRE.

ACCRINGTON.

92. Boothman, W.
400. Heys, Abraham.
930. Wigglesworth, Robert.

BLACKBURN.

182. Constantine, W. L.
391. Hearn, Rev. E. M.

BOLTON.

113. Briars, William.
121. Brown, John.
214. Daniels, J.
260. Entwistle, Henry.
285. Fraser, Finley.
324. Gray, John.
421. Holt, James.
463. Johnson, W.

LANCASHIRE—*continued.*

BOLTON—*continued.*

641. Owen, James.
666. Pickering, William.
677. Porter, Thos.
741. Rothwell, Richard.
813. Stephenson, Henry.
881. Turner, Edwin.
921. West, Thomas.

BURY.

778. Simpkin, E.

CHORLEY.

759. Scott, Henry.

LIVERPOOL.

17. Archer, F. jun.
291. Galliers, Thomas.
321. Grainger, John.
339. Gregson, C. S.
377. Harrison, William.
462. Johnson, Serjeant.
580. Melly, C. P.

LYTHAM.

340. Gregson, William.

MANCHESTER.

5. Adamson, John.
76. Blakeley, John.
96. Boulaye, W. G. De la.
119. Brown, D. E.
145. Campbell, Charles.
152. Carter, Samuel.
161. Chappell, Joseph.
184. Cooke, Benjamin.
243. Edleston, R. S.
244. Edmondson, James.
245. Edmondson, Townley.
289. Friar, Charles.
359. Hague, Thomas.
368. Hardy, John.
376. Harrison, Thomas.
428. Howarth, Thomas.
478. Kelsall, Thomas.
480. Kenderdine, Frederic.

LANCASHIRE—*continued.*

MANCHESTER—*continued.*

505. Labrey, B. B.
536. Linton, James.
636. O'Brien, C. F.
685. Prescott, W.
789. Smith, John.
867. Tinker, Jethro.
882. Turner, J. Aspinall.

PRESTON.

318. Graham, Edmund.
415. Hodgkinson, J. B.
696. Pugh, Thomas R.
728. Robinson, H.
731. Robinson, W.
766. Sharples, Richard.
827. Swann, W.

ST. HELENS.

762. Seddon, George.

ULVERSTONE.

496. Kirby, James.
573. Mason, Anthony.

WARRINGTON.

142. Buxton, E. C.
189. Cooper, James.
276. Forrest, B. G.
334. Greening, Noah.
481. Kendrick, B.
550. M'Keand, John H.
551. M'Keand, Robert.
964. Young, Reginald and Edward.

WIGAN.

419. Holcroft, William.

LEICESTERSHIRE.

LEICESTER.

48. Bates, F.
567. Marshall, Thomas.
672. Plant, Francis.

LEICESTERSHIRE—*continued.*

MARKET HARBOROUGH.
308. Goadby, Rev. J. J.

MELTON MOWBRAY.
852. Frisby, Charles.

LINCOLNSHIRE.

BRIGG.
323. Grantham, Henry.

GAINSBOROUGH.
277. Forington, Jabez.
840. Tearle, E.

STAMFORD.
848. Thompson, Miss S.

WRAGBY.
817. Stockdale, E.

MIDDLESEX.

HARROW.
902. Walker, E.

SHEPPERTON.
520. Lea, J. W.

MONMOUTHSHIRE.

MONMOUTH.
504. Kuper, Rev. C.
513. Langley, W.
914. Watkins, W.

PONTYPOOL.
75. Bladon, J.

NORFOLK.

BECCLES.
952. Winter, William.

NORFOLK—*continued.*

HARLESTON.
281. Fox, W. L.
836. Taylor, F.

LONG STRATTON.
454. Jerrard, F.

LYNN.
490. King, E. L.

NORWICH.
114. Brightwell, Thomas.
207. Cubitt, W. Q.
864. Tillett, W. H.

SCOLE.
46. Barton, W. H.
742. Ruspini, F. O.

WYMONDHAM.
553. M'Lachlan, J.

NORTHAMPTONSHIRE.

KETTERING.
824. Sturgess, W.
841. Tearle, Rev. F.
885. Tweed, E. B.

NORTHAMPTON.
395. Hensman, Arthur.
791. Smith, J. W., jun.

OUNDLE.
110. Bree, Rev. W.
924. Whall, Rev. W.

WELLINGBOROUGH.
343. Griesbach, Rev. A. W.

NORTHUMBERLAND.

BELFORD.
763. Selby, J. P.

NORTHUMBERLAND—
continued.

NEWCASTLE-ON-TYNE.

83. Bold, T. J.
660. Perkins, V. R.
669. Pigg, Thomas.
899. Wailes, George.

NOTTINGHAMSHIRE.

EDWINSTOWE.

733. Roe, W. J.
878. Tudsbury, P., jun.

ILKESTON.

290. Fuller, Rev. A.

MANSFIELD.

103. Brameld, R. E.
637. Oldham, F. H.
712. Reynolds, R. S.

NEWARK.

297. Gascoyne, G.
358. Hadfield, W. P.
437. Huskings, C. E.
869. Tomlinson, J. H.

NOTTINGHAM.

8. Allen, C. F.
9. Allen, William.
38. Barnes, S. B.
133. Bull, E.
170. Clarke, J. and H. B.
239. Durand, J. L. E.
280. Fox, J.
286. Freason, G.
531. Lineker, S.
606. Morley, John.
607. Morley, W.
628. Nicolls, S.
717. Riley, S. H.
718. Riley, T.
739. Rose, W. B.
781. Slater, R.
793. Smith, W. H.
800. Spencer, W.
804. Stafford, J.

OXFORDSHIRE.

BANBURY.

822. Stretch, R. H.

CHARLBURY.

753. Saunder, W. J.

DEDDINGTON.

595. Mitchell, C. B.

HENLEY.

68. Birks, Rev. H.
823. Stubbs, H. J.

OXFORD.

171. Clarke, Mrs. L. L.
574. Mathews, Murray A.
594. Minchin, Rev. H. H.
630. Norman, Rev. A. M.
665. Pickard, Rev. H. Adair.
923. Westwood, J. O.
938. Wilkinson, Rev. W. G.

TETSWORTH.

651. Partridge, A. W.

SHROPSHIRE.

MARKET DRAYTON.

426. Houghton, Rev. W.

OSWESTRY.

724. Roberts, T. Vaughan.

SHREWSBURY.

747. Salt, G. M.

WORTHEN.

223. Done, John.

SOMERSETSHIRE.

BATH.

101. Braikenridge, Rev. G. W.
198. Cranstone, Joseph.
279. Fowler, W. N.
453. Jenyns, Rev. L.
599. Moor, J. H.
916. Wattson, Martin.

SOMERSETSHIRE— *continued.*

BRIDGEWATER.
39. Barnwell, J. C.
750. Sanders, John.

CASTLE CARY.
547. Macdonald, S. R.

ILMINSTER.
104. Braund, E.
472. Jordan, W. J.

SOMERTON.
893. Valentine, W. H.

TAUNTON.
549. M'Intosh, J.
704. Rawlinson, W. G.

WELLINGTGN.
592. Miller, E., jun.

WESTON-SUPER-MARE.
127. Bryant, A. C.
201. Crotch, G. R.
202. Crotch, W. D.

STAFFORDSHIRE.

BURTON-ON-TRENT.
120. Brown, Edwin.

LEEK.
700. Putnam, George.

LICHFIELD.
708. Reeve, G. W.

RUGELEY.
88. Bonney, E. S.

STOKE-UPON-TRENT.
294. Garner, Robert.

WEDNESBURY.
749. Sampson, T. L.

WEST BROMWICH.
236. Duncalfe, Henry.

SUFFOLK.

BOTESDALE.
218. Dawson, S. T.

BUNGAY.
295. Garneys, C.
296. Garneys, W.

BURY ST. EDMONDS.
302. Gedge, J.
349. Groom, Miss S.

IPSWICH.
59. Berridge, E. W.
108. Bree, Rev. H.
541. Longe, J.

NEEDHAM MARKET.
177. Clowes, G. A.

SAXMUNDHAM.
959. Woods, S. E.

STOWMARKET.
200. Crewe, Rev. H. H.

WANGFORD.
457. Jodrell, Rev. H.

SURREY.

DORKING.
206. Cubitt, C.

EPSOM.
80. Bockett, Rev. B. B.
738. Rogers, T.

FARNHAM.
528. Lewcock, Henry.

GUILDFORD.
625. Newnham, Rev. P. H.

LEATHERHEAD.
654. Payne, J. F.

SURREY—*continued.*

REIGATE.

112. Brewer, J. A.
533. Linnell, John, jun.
534. Linnell, Thos.
755. Saunders, W. W.
915. Watney, Daniel.

THAMES DITTON.

382. Hastings, Sidney.

WALTON-ON-THAMES.

398. Hewitson, W. C.

WEYBRIDGE.

658. Pennell, A. Francis.

SUSSEX.

BRIGHTON.

15. Andrews, Percy.
174. Clayton, E. G.
185. Cooke, Henry.
235. Duke, F.
253. Egles, E. H.
254. Egles, G. M.
288. Fry, Hubert.
345. Griffith, J. R.
346. Griffith, Thomas.
348. Groom, C. O.
427. House, Samuel.
440. Image, Rev. J.
498. Kirby, W. F.
557. Madden, H. R.
674. Pocock, Crawford J.
683. Pratt, John and Henry.
786. Smith, George.
792. Smith, R.
825. Style, Sidney.
858. Thorncroft, Thomas.
863. Tidy, Lewis.

CHICHESTER.

232. Draper, W. H.

EAST GRINSTEAD.

561. Major, W.
576. May, W.

SUSSEX—*continued.*

HORSHAM.

313. Gore, Rev. H. J.

LEWES.

77. Blaker, M. S.
482. Kenware, J.
676. Porter, J., jun.
892. Unwin, W. C.

MIDHURST.

780. Skeffington, H. C.

NEWHAVEN.

709. Reeve, J. J.

UCKFIELD.

386. Hay, A. J.

WORTH.

251. Edwards, W.
776. Silvester, E. T.

WORTHING.

649. Parry, Captain F. J. S.

WARWICKSHIRE.

ALLESLEY.

109. Bree, Rev. W. T.

ATHERSTONE.

494. King, Rev. P. M.

BIRMINGHAM.

134. Bull, W.
139. Burns, Henry.
140. Burns, Robert.
146. Campbell, Thomas.
230. Drakeford, John.
315. Gould, Henry.
328. Green, John.
344. Griffin, Isaac.
417. Hodgson, C. B.
471. Jordan, Dr.
503. Knight, F., jun.
564. Mansfield, Richard.

WARWICKSHIRE—*continued.*

BIRMINGHAM—*continued.*

587. Meyer, Frederick.
690. Price, Samuel.
820. Stone, J. B.
940. Willetts, Henry.

LEAMINGTON.

259. Enoch, William.

RUGBY.

180. Colvin, J. W.
341. Grenfell, J. G.
907. Walker, J. D.

WARWICK.

438. Hyde, Fred. Osman.

WESTMORELAND.

APPLEBY.

56. Bedford, T.
525. Leslie, David.
616. Moses, Henry.
720. Rix, J. L.

KENDAL.

267. Fawcett, J. K.

WILTSHIRE.

AMESBURY.

155. Caswall, R. C.
701. Pyle, G.

CORSHAM.

418. Hogan, Rev. A. R.
501. Knapp, William.
618. Mullens, E. H.

DEVIZES.

734. Rogers, B.

MARLBOROUGH.

89. Bonney, F.
688. Preston, Rev. T. A.

WILTSHIRE—*continued.*

TROWBRIDGE.

572. Martin, W.

WORCESTERSHIRE.

EVESHAM.

389. Head, John D.

WORCESTER.

424. Horton, Rev. E.
783. Smith, Edward.
790. Smith, John.
847. Thompson, C.
849. Thompson, T.
942. Willis, T. W. B.

YORKSHIRE.

BOSTON SPA.

655. Pearson, Edward.
765. Sergeant, Lewis.

BRADFORD.

577. Meade, R. H.

DEWSBURY.

903. Walker, M.

DONCASTER.

167. Clark, S.
385. Hawley, A.
710. Reid, Hugh.

GOOLE.

57. Bell, R. J.

GUISBOROUGH.

451. Jeffrey, W.

HALIFAX.

154. Cash, William.
203. Crowther, James.
420. Hollenrake, J.
826. Sutcliffe, Joseph.
910. Ward, Christopher.

HUDDERSFIELD.

441. Inchbald, Peter.
444. Ingle, T. W. B.

YORKSHIRE—*continued.*

HUDDERSFIELD—*continued.*

461. Johnson, Rev. J.
632. North, James.
866. Tindall, George.
894. Varley, J.

HULL.

812. Stather, T.
850. Thompson, Thomas.
962. Young, James.

KEIGHLEY.

322. Grant, Rev. J. B.

KNARESBOROUGH.

909. Walton, John.

LEEDS.

36. Barker, William.
60. Berry, John.
102. Braim, John.
105. Bray, Edwin.
118. Brooke, Jonathan.
132. Buckton, Frederick.
196. Coxon, John.
208. Cundell, Robert.
220. Denny, Henry.
431. Hudson, George.
538. Liversidge, William.
613. Morris, W. Whytehead.
634. Oates, F.
635. Oates, W.
656. Pearson, John.
725. Roberts, Williams.
788. Smith, H. S.
837. Taylor, James.
839. Taylor, W. H.
931. Wignall, J. U.
932. Wignall, Samuel.

MIDDLESBOROUGH-ON-TEES.

760. Scott, John.

POCKLINGTON.

352. Gruggen, A. W.

YORKSHIRE—*continued.*

RIPON.

11. Almond, F.
122. Brown, J.
172. Clarke, Thomas.
570. Marston, G.
578. Meldrum, T.
884. Tutin, J. Hazledine.

ROTHERHAM.

455. Jessop, John, jun.
732. Rodgers, William.
777. Simmons, William.
844. Thomas, William.

SCARBOROUGH.

71. Bissill, W. K.
183. Cook, Robert.
614. Morton, Edward.
937. Wilkinson, T.

SELBY.

412. Hobson, Richard.
488. Killingbeck, James.

SHEFFIELD.

51. Batty, James.
100. Bradley, Francis.
270. Fenton, John.
330. Green, W.
402. Hicks, W.
439. Hydes, W.
519. Laycock, William.
752. Sanson, Ezra.

THORNE.

331. Greene, George.

WAKEFIELD.

317. Grace, Thomas.
545. Lumb, G.
722. Roberts, Charles.
830. Talbot, W.
891. Ulyatt, W.
947. Wilson, Junius.

WATH.

589 Middleton, Rev. C. H.

YORKSHIRE—*continued.*

YARM.

588. Meynell, Thomas.

YORK.

10. Allis, T. H.
13. Anderson, Robert.
68. Birks, John.
191. Cooper, Walter.
387. Hayden, Rev. F. W.
393. Helstrip, Charles.
399. Hey, Rev. William.
409. Hind, Robert.
600. Moore, B. J.
609. Morris, Rev. F. O.
610. Morris, Marmaduke C. F.
611. Morris, Reginald F.
686. Prest, William.
687. Preston, Rev. J. D. J.
705. Read, Rev. G. Rudston.
729. Robinson, J.

NORTH WALES.

CARNARVON.

794. Smith, W. P.

LLANRWST.

74. Blackwall, J.

MACHYNLLETH.

6. Alington, A. M.

PONTYPRIDD.

458. John, Evan.

SOUTH WALES.

ABERGAVENNY.

31. Baker, William.

BRECON.

124. Browne, Rev. C.

BUILTH.

467. Jones, J.

SOUTH WALES—*continued.*

CARDIFF.

231. Drane, Robert.
639. Ollevant, J.

LLANDOVERY.

250. Edwards, T. W.

MERTHYR TYDVIL.

650. Parry, Thomas.

WELSHPOOL.

465. Jones, Capt. J. M.

SCOTLAND.

ABERDEEN.

72. Black, John.
157. Chalmers, J. H.
163. Christie, G. G.
450. Jazdowski, Bronislas.
597. Moir, David.
946. Wilson, John.

AYRTON.

486. Kidd, R. C.

BANFF.

247. Edward, Thomas.
336. Gregor, Walter.

BRECHIN.

663. Philip, Robert.

CASTLE DOUGLAS.

425. Hosach, W. J. R.

COCKBURNSPATH.

367. Hardy, James.

DUMFRIES.

305. Gibson, W. G.
342. Grierson, T. B.
857. Thorburn, W. S.

SCOTLAND—*continued.*

DUNBAR.

434. Hunter, Miss.
622. Nelson, C.

EDINBURGH.

107. Bree, C. R.
422. Hood, Robert.
540. Logan, R. F.
542. Lowe, W. F.
619. Murray, A.
872. Traquair, R. H.
943. Wilson, Andrew.

ELGIN.

312. Gordon, Rev. Geo.

FALKIRK.

216. Dawson, John.
411. Hislop, Robert.
456. Jobson, Henry.
593. Millingen, Charles.

GLASGOW.

159. Chapman, Algernon.
160. Chapman, Thomas.
179. Colquhoun, Hugh.
797. Somerville, Alexander.
798. Somerville, James, E.

HAMILTON.

511. Lang, W.

HAWICK.

620. Murray, J. A. H.

HUNTLEY.

111. Bremner, Dr. Jas., jun.

KELSO.

508. Lamb, Rev. William.

KIRKPATRICK JUXTA.

537. Little, Rev. W.

KIRKWALL.

446. Iverach, J. G.

SCOTLAND—*continued.*

KIRRIEMUIR.

854. Thomson, W. Burns.

LERWICK, SHETLAND.

555. Maclaurin, Rev. Rob.

MARKINCH, FIFE.

900. Waite, Josiah.

MONKTON.

237. Duncan, John P.

NORTH BERWICK.

556. Macmorland, John P.

PAISLEY.

963. Young, Morris.

PERTH.

507. Lamb, James.
559. Mailer, Daniel.
604. Morison, David P.
876. Trotter, James.
927. White, F. B. W.

PETERHEAD.

702. Ramsay, J.
966. Yuill, Rev. James.

STONEHAVEN.

853. Thomson, R.

IRELAND.

BALLYMONEY.

61. Bewley, Rev. F.

BELFAST.

115. Bristow, John.
856. Thomson, Professor W.

CAVAN.

363. Halpin, Charles.

IRELAND—*continued.*

DUBLIN.

44. Barton, Lieut. Robert.
65. Birchall, Edwin.
66. Birchall, E. H.
361. Haliday, A. H.
489. Kinahan, J. R.
727. Robinson, G. W.
829. Tagart, W. Robert.
960. Wright, Dr. E. Percival.

FOYNES.

713. Rice, Edward.

IRELAND—*continued.*

NAVAN.

868. Tisdall, W. G.

PARSONSTOWN.

292. Galloway, A.

TINAHELY.

116. Bristow, Rev. John.

WESTPORT.

748. Salt, Samuel.

NEUROPTERA.

Synopsis of the British Phryganidæ.

By Dr. Hagen.

[The first portion only of this Paper is now given, owing to its length and the pressure of other matter.]

Introduction.

England is the cradle of our present knowledge of the *Phryganidæ*. More than a century and a half ago Willoughby gave (*Raii Hist. Ins.*) a review of the cases of the various species, which shows an accurate acquaintance with the subject. Nearly fifty years ago we find in Dr. Leach's excellent article Entomology (Brewster's Encycl. vol. ix. 1815), the first useful classification of the *Phryganidæ*. At p. 136 we read:—"We must refer to a work which Dr. Leach is about to publish, entitled, 'Trichoptera Systematica.'" Unfortunately this work has never appeared. However, the genera established by Leach, from their truth to nature, essentially constitute the foundation of every subsequent work, and at the same time prove how earnestly he had occupied himself with this subject. There can be no doubt that even now the publication of his manuscript investigations upon the *Phryganidæ* (in case they be still in existence) would be of great value to science.

Thus the classification of Stephens rests almost throughout upon the previous works of Leach, and this is sufficiently indicated from the fact that the genera in Stephens' "Illustrations" are for the most part very good, whilst the description attached to the genus often contains very striking errors, as in the number of spurs and joints of the palpi. This circumstance, coupled with the insufficient descriptions, has rendered the determination of his species impossible; their number is very considerable (187), but may be reduced more than a third when the double references to species are deducted. Two years before the appearance of the "Illustrations," Curtis had given the characters of a number of new species in the "Philosophical Magazine" for 1834; these also cannot be determined with certainty from the descriptions, whilst, on the contrary, the species in the "British Entomology" of the same author, the number of which is unfortunately small, are represented in his well known masterly manner. A few species, given by Donovan and others, are hardly to be determined with certainty.

The section of Westwood's "Introduction" relating to the *Phryganidæ* constitutes, as is always the case in this classical work, a rich mine of information. The deficiency referred to, in the descriptive part of the works of Stephens and Curtis, and in Walker's "Catalogue," is the less blameable in those naturalists, as every work upon the *Phryganidæ*, not excluding Pictet's Monograph, are in the same case. This deficiency, therefore, is evidently due to the difficulty of the subject itself, and to the fact that these naturalists have confined themselves entirely to characters of coloration. Rambur and Brauer (*Neuropt. Austr.*) have, therefore, rightly struck into a new course, and employed structural characters in the identification of the species. Unfortunately

the *appendices anales*, which are here of especial importance, cannot be clearly explained without figures, or long detailed descriptions; and I have, consequently, for the most part, left them unnoticed in the "Synopsis," although they have always been carefully examined by me, and indeed the reduction of Stephens's species depends upon their examination.

With regard to the determination of the *Phryganidæ* I have to offer the following hints:—

I. In the first place the palpi, and especially the maxillary palpi, are to be carefully examined, and the number of their joints determined. If there be less than five (always in males) the insect belongs to the HETEROPALPI. It is certainly an unfortunate circumstance that the females of these always bear five joints, but by taking into consideration the other characters, and by the help of a little practice, there will rarely be any doubt. The *Hydropsychidæ*, which are otherwise so difficult to separate, are readily distinguished from all others by the abnormal form of the last joint of the palpi. This is very long, and composed of numerous small joints closely pressed together; this is not to be confounded with the forms in which there is a flexibility [of the last joint] without any division into joints (*e. g. Leptocerus*). The relative proportions of the joints of the palpi form very important and easily seized generic characters, especially in the ISOPALPI.

II. Next to the palpi the antennæ must be compared. Their characters are usually distinctly perceptible, and consist in the length and thickness of the antennæ, and in the proportions of the basal joint. At the same time it must not

be forgotten that, in some cases (*Sericostomidæ*, *Leptoceridæ*), the antennæ differ in the sexes.

III. A third important character in the determination of genera consists in the presence or absence of ocelli; however, in species strongly clothed with hair this investigation is not always very easy. When they are present there are always *three* ocelli, by which the *Phryganidæ* are distinguished from the *Lepidoptera*, in which the ocelli are *two* or none.

IV. The fourth character for the distinction of genera, and which, from its intelligibility, is almost the most important, is presented by the spurs of the legs. These differ from the spines, of which several rows are usually present, by their size, and nearly always by their different colour: it is but rarely that they are so small as to leave one in doubt (*Dasystoma*). The spurs are situated on the tibiæ; there are at the utmost four on each tibia, namely, two at the apex and two more in the middle; the anterior tibiæ never exhibit more than three spurs, two at the apex and one in the middle. Their number is always expressed by figures,—for example, 3, 4, 4, indicates anterior tibiæ with three, intermediate tibiæ with four, and posterior tibiæ with four spurs. The greatest number present is 3, 4, 4,—the smallest 0, 2, 2. In *Hydroptila*, *Chimarra* and some exotic forms, the number differs in the two sexes. On the other hand in some forms (*Hydropsychidæ*, *Agapetus*, &c.) the tibiæ themselves are considerably dilated in the females; the form of the tarsal joints (*Chimarra*) and of the claws of the anterior feet (*Rhyacophilidæ*, &c.) is also sometimes sexually different.

V. In the fifth place the wings furnish important generic

and specific characters. The various combinations of the veins are easily intelligible, if we first investigate the simplest and most regular form of the venation (*Hydropsyche*), and from this derive the other forms. Close to the anterior margin of the wings runs a strong longitudinal vein, the *radius;* a finer longitudinal vein, the *subcosta,* running between the radius and the anterior margin, is of no value in classification. Close to the base two longitudinal veins spring from the radius, the *Ramus discoidalis* and *Ramus thyrifer*, which sustain almost the whole of the anterior wing, and in the posterior wings the anterior portion as far as the folded hinder space. These two branches, almost alone, are of importance in classification; the other veins consist of the *cubitus* with its branches. The *Ramus discoidalis* and *R. thyrifer* soon divide, and the anterior branch of the *R. thyrifer* (the *R. thyrifer* strictly so called, whilst the hinder branch is called the *R. clavalis* by Kolenati) divides again. We thus obtain five longitudinal veins,—two belonging to the *Ramus discoidalis* and three to the *R. thyrifer.* These five longitudinal veins (or a part of them) terminate with a forked cell at the margin of the wing. If, then, transverse veins unite these five cells, the latter with the four intervening spaces constitute nine apical cells. The uniting transverse veins form a straight or broken line, the *anastomosis.* According as the transverse veins unite all the cells, or only some of them, the anastomosis is *complete* or *incomplete.* If a transverse vein unites the two branches of the *R. discoidalis*, an elongated cell, the *discoidal cell,* is thereby produced. The anterior branch of the *R. thyrifer*, a little before its furcation, exhibits a pale perforated spot, the *thyridium.* If we compare the other forms of the venation with this simple representation, they may be easily reduced, es-

pecially the complicated forms of the HETEROPALPI. The variations consist partly in the more or less complete anastomosis, and partly in the presence or absence of the cells of furcation at the ends of the five branches. On the whole the venation furnishes especially generic characters; only the five first apical cells (the four others are called *sub-apicales* by Kolenati) sometimes furnish specific characters in the HETEROPALPI. Not unfrequently the venation presents sexual differences; thus with Stephens the sections B. and C. of *Leptocerus* contain only the different sexes of the same species. The venation is, however, very constant in different individuals of the same species, and only subject to unimportant variations.

VI. The structure of the apex of the abdomen presents, in the sixth place, extremely important specific characters. Its investigation is not yet sufficiently advanced to enable it to be employed throughout in a Synopsis. The genera, or, at all events, the groups, always exhibit a definite type, the details of which are modified in very various ways in the different species. The observation of these parts require some practice and a considerable magnifying power.

In the males there are always a pair of superior and a pair of inferior *appendices;* between the latter lies the penis, which is accompanied above and below by a pair of sheaths; the upper sheaths in the HETEROPALPI probably form the *appendices intermediæ;* in the *Leptoceridæ* and others the so-called cover of the penis. The form of all these parts is very various,—so that, whilst in one group the *appendices superiores* furnish the specific characters, although the other parts always exhibit a great similarity of structure, in others these characters are derived from the *app. inferiores*, the

sheaths of the penis, or the penis itself. Besides these appendages, the upper and lower margins of the last abdominal segment, and sometimes peculiar appendages on the ventral surface of the penultimate and antepenultimate segments, are also of value as characters.

In the females the apex of the abdomen either forms a telescopic tube or a spine-like ovipositor, or it is obtusely truncated, with the orifice of the oviduct over the penultimate segment. Sometimes, in the females, the same parts may be detected as in the males, especially *app. superiores*, *inferiores* and *intermediæ;* in most cases, however, the parts are too much changed to allow any analogy. In general the specific distinctions of the females are here less distinctly marked.

VII. Lastly, in the seventh place, the coloration of the animals presents specific characters, in the application of which, however, great care must be employed. The coloration and marking of the insects consists principally in the covering of hair, which is very easily rubbed off, and besides the colours fade by long keeping. Moreover, the coloration and marking vary within rather wide limits, and animals newly excluded are pale and nearly colourless, and very old insects are often completely rubbed. The coloration of parts destitute of the hairy covering are also not perfectly stable.

I find the most profitable mode of capturing the insects to consist in beating into the umbrella [or beating-net], especially amongst firs and willows on the margins of woods, even at a considerable distance from water. A convenient place for taking them is also presented by walls or palings by the water side, especially in the forenoon. Some genera (*Leptoceridæ*) swarm in great quantities over the water, and

are then to be taken with the net. If a bright lamp be placed upon a table covered with a white cloth at no great distance from water, species are often taken easily, which may be sought for in vain by day. In order that the insects may not rub themselves by fluttering, they must be killed rapidly; tobacco smoke blown two or three times into the half-opened boxes, which are then quickly closed, soon kills or stupifies even large species. Very small species (*Hydroptila*) are best pinned at home. For the sake of the *appendices anales* it is necessary to set all the species with the wings expanded, but, when possible, also to place by the side of them some unexpanded specimens, as the latter are very different in their appearance, and some writers describe expanded and others unexpanded specimens.

The knowledge of the earlier stages and their cases is still in a very backward state. As a general rule rearing them is not very difficult, if the following rules be observed. Full grown larvæ or pupæ, which have been captured in the open waters, usually die very easily in captivity. But if some glasses with aquatic plants (*Ranunculus aquaticus*, *Stratiotes aloides*, *&c.*) be kept ready, and the eggs laid by captured females (which is a frequent occurrence) be placed in them, full grown larvæ at any rate may easily be obtained. Gravel, fragments of stone or roots, may be put in to be selected from for the cases; the presence of some Mollusca (*Limnæus*, &c.) is also of use; but there must not be too many of these, as they greedily devour small larvæ of *Phryganidæ*.

So far as we can judge at present Great Britain is very rich in *Phryganidæ*, and the number of species is considerably greater than is here stated. The abundance of water, and the varied nature of the soil, permit us to expect the

presence of nearly all the species of central Europe, and, for Scotland, the Alpine species of Switzerland and Scandinavia. It is very probable that even the remarkable genus *Enoicyla*, with apterous females and the larvæ living out of the water, will occur in Britain. I cannot resist here calling attention to a notice by Doubleday (Ent. Mag. Vol. V. p. 279), which has hitherto been overlooked. The indication of Isopalpi with apterous females in North America renders it not improbable that similar species will occur in Europe.

The materials made use of by me are the following:—The collection of the British Museum, and the Stephensian types preserved there, have been studied by me as carefully as possible. The knowledge of the species is rendered difficult by the circumstance that Stephens ticketed his collection, not in accordance with the "Illustrations," but with the "Catalogue," and in some instances has inserted what are evidently different animals. Some species are altogether wanting, or could not be ascertained. The collection of Mr. Curtis I was only able to look through once, notwithstanding the obliging kindness of its celebrated owner. It contains much that is beautiful and deserving of further examination; the species also are well separated. Mr. Newman's collection furnished me with interesting details and unique specimens (*Apatania*), as did also a small number of species collected by Mr. Walker, which I received through Mr. Stainton. I have obtained some extremely important results from a number of types sent by Pictet to Curtis, and furnished by the latter with his names. I am indebted for the permission to study these carefully (the final conclusion of the investigation, which is completed as far as the *Hydropsychidæ*, has been delayed by circumstances beyond my control), to

the honourable confidence of Dr. Gray, and the self-sacrificing kindness of Mr. Adam White.

I have always preferred giving only those species about which I was certain, and leaving the rest to the amplification and observation of native Entomologists. There is no doubt that they will yet find a rich treasure here. It will also easily be observed that my work is rather unequal. This is owing simply to the circumstance, that for particular genera I had better previous works to start from. With regard to the synonyma I have the following observation to make:— Curtis's work appeared in February and March, Pictet's in July, 1834. Stephens (Illustrations, l. c. p. 147) is of opinion that Pictet's names, as belonging to a comprehensive monograph, deserve the preference. As, however, the majority of the British Entomologists may not share in this opinion, I have placed Curtis's names first. However, the number of names thus brought into collision is but small. With regard to the other synonyma, I have limited myself to the most necessary ones; those adduced almost rest upon the examination of typical specimens. It is a great disadvantage that the above-mentioned types of Pictet's are not compared with those of Stephens, as I could only obtain the former on the very day before my return home. This is the more important, as a number of nearly allied and hitherto confounded species were only rendered distinct to me by these types.

The *Phryganidæ* undoubtedly form the most difficult portion of my work upon the British *Neuroptera*. This work is indebted for its production to British kindness and hospitality. May it be found not unworthy of both! In judging of it, it should not be left out of consideration that the vast impression which London produced upon the mind

and feelings of the investigator perhaps made him stumble in some details. My wishes are fulfilled if, by the following essay, British naturalists should feel themselves impelled to take up and follow the course so brilliantly opened by Leach.

N.B.—The measurements given are average measurements, as the animals sometimes vary considerably in size.

Phryganidæ, Latreille, 1803.

Trichoptera, Kirby, 1813; Stephens, Curtis, Westwood.

Wings 4, arranged like a roof; the longitudinal veins united by but few transverse veins; prothorax very short; antennæ with numerous joints, long and thin; oral organs rudimentary, only the palpi developed; maxillary palpi five-jointed, or less; labial palpi three-jointed; legs long and thin; tibiæ furnished with movable spurs; tarsi five-jointed.

Division I. Heteropalpi, Kolenati.

Maxillary palpi of the females with five, of the males with *fewer* joints.

Sub-Family 1. Phryganides.

Maxillary palpi of the males *four-jointed;* ocelli *present;* 2, 4, 4 *spurs;* antennæ as long as the wings.

Genus Phryganea, Linné, Stephens.

Wings *hairy,* the anterior with an elliptical apex; palpi short, broad, sparingly and shortly hairy; tibiæ *spinose.*

Coloration a monotonous grey, spotted with brown or black; this genus includes the largest indigenous species.

The larval case consists of quadrangular fragments of leaves,

disposed in a spiral turned towards the left. They live in stagnant or slowly flowing deep water.

† The posterior branch of the *ramus thyrifer* of the anterior wings simple in the male, furcate in the female.

1. PHRYGANEA GRANDIS, L.; Steph. Ill. 205, 1; Curtis, B. E. 592, 1; Walk. Cat. 4, 1; Hagen, Linnæa, V. 366; *P. atomaria*, Steph. Ill. 206, 3, ♂.

Antennæ clay-coloured, annulated with brown; thorax and abdomen brownish yellow; legs testaceous, apices of the tarsal joints and the anterior thighs brown; anterior wings ashy grey, mingled with brown, with two white dots, and in the female *with a broad, bidentate, black, longitudinal band;* posterior wings grey, *bordered with black along the veins at the apex and hinder margin.* App. anal. sup. ♂ cylindrical, long, with the thickened tips *bent inwards and downwards* (Brauer, Neur. Austr. fig. 37; Curtis's B. E., 592, A).

Hab., May to July, Albury in Surrey, Ripley, Hertford, New Forest, Devonshire; local, sometimes very abundant.

Length, with closed wings, 10 lin.; exp. 20 lin.

2. P. STRIATA, L.; Hagen, Linnæa, v. 366; *P. grandis*, De Geer, Scopoli; *P. fulvipes*, Burm.; *P. Beckwithii*, Steph. Ill. 206, 2; Curtis, B. E. 592, 2.

Antennæ brown, annulated with black; thorax and abdomen dark piceous; legs brown, the base of the tarsal joints and the posterior legs testaceous; anterior wings ashy-grey, but little mingled with brown, with two white dots, and in the female *with a short, interrupted, black, longitudinal line;* posterior wings

grey. App. anal. sup. ♂ cylindrical, long; the thickened apices *bent outwards and upwards* (Brauer, N. A. fig. 38).

Hab. England, coll. Steph. (mixed with *P. grandis*); coll. Curtis; coll. Linné (but not the type specimen); coll. Banks.

Length 9 lin.; exp. 18 lin.

3. P. VARIA, F.; Steph. Ill. 206, 4; Curtis, B. E. 592; Walk. Cat. 5, 3.

Antennæ testaceous, annulated with black; thorax piceous, above with grey and black hairs; abdomen testaceous; legs testaceous, tibiæ and tarsi of the anterior and intermediate legs strongly annulated with black; anterior wings grey, spotted with brown, with two white dots; posterior wings grey, the margin with a blackish border. *App. sup. ♂ short, foliaceous, horizontal, bordered with long yellow hairs (black beneath)*, the apex beneath black; App. inf. long, cylindrical, curved upwards, with a short tooth before the apex (Brauer, N. A. fig. 36).

Length 7 lin.; exp. 14 lin.

Hab. in June, not rare near London, Norfolk, Cambridge, South Wales, Devonshire, Darenth, Bottisham, Cumberland, Parley, Uggmere, and the Trossachs in Scotland.

† † The posterior branch of the *ramus thyrifer* of the anterior wings simple in both sexes. Sub-genus *Trichostegia*, Kolenati.

4. P. MINOR, Curtis, B. E. 592; Steph. Ill. 207, 5; Walk. Cat. 5, 1; *P. mixta*, Burm.; *P. tortriceana*, Ramb.

Antennæ testaceous, annulated with brown, with their base blackish; thorax and abdomen testaceous; legs testaceous, the ends of the tibiæ and the tarsi of the anterior and intermediate legs annulated with black; anterior wings brown, spotted with grey; *two larger obsolete grey spots on the anterior margin, and three interrupted grey transverse lines on the hinder margin*; border white, spotted with black; posterior wings grey, with a darker margin. App. sup. ♂ small, coalescent, bordered with yellow; App. inf. large, hook-shaped, bent inwards and upwards, thicker at the base.

Length 4 lin.; exp. $8\frac{1}{2}$ lin.

Hab., in July, Epping Forest, Parley Heath, South Lambeth, New Forest, Scotland.

Genus NEURONIA, Leach, Stephens.

Wings *not covered with hair*, the anterior with the apices elliptical; palpi short, broad, scarcely hairy; legs almost spineless; *the discoidal cell of the anterior wings is remarkably short and narrow, nearly elliptical.*

Colour of the body black; legs usually pale, with black tarsi; wings unicolorous, dusky, with strongly marked veins.

The case of the larvæ is composed of quadrangular fragments of leaves arranged in a spiral *turned towards the right.* They live in stagnant water.

5. NEURONIA RUFICRUS, Scop.; Walk. Cat. 11, 13; *N. fusca*, Steph. Ill. 234, 1; *P. striata*, Burm.; *O. analis*, Kolen.

Shining black; *wings uniform blackish brown, translucent, with the veins darker and very distinct*; legs

brownish, with the thighs of the anterior and intermediate legs paler at the knees; posterior tibiæ yellow, with the base brown; tarsi black; posterior tibiæ almost without spines. App. sup. ♂ small, coalescent with a pyramidical process arising from the margin of the last segment; App. inf. oval, foliaceous; at the apex with a long, thin, movable spine, articulated backwards.

Length 7 lin.; exp. 12 lin.

Hab. near London, in the summer, rather rare.

The nearly allied species of *Holostomis*, *H. reticulata*, *clathrata* (in the British Museum without habitat, from Children's collection) and *phalænoides* (indicated by Turton as British) will probably occur in England: even *H. atrata* (*Altaica*, Fischer) might be met with in the north of Scotland. These species are usually local, and often do not appear for a long time. *H. phalænoides* was only rediscovered in Sweden fifty years after Linné's death.

Holostomis reticulata, L.: Walk. Cat. 7, 1. Black; wings yellow, the anterior checkered with black, the posterior bordered with black, *with a black curved line in the middle;* legs black; *posterior tibiæ yellow.* Length 5 lin.; exp. 11 lin. Hab. Sweden, Germany, France.

H. clathrata, Kolen.; Walk. Cat. 7, 2. Very like the preceding; *posterior wings with diffused black spots from the base to the curved line, and all the tibiæ yellow.* Length 5 lin.; exp. 11 lin. Hab. Sweden, Germany.

H. phalænoides, L.; Walk. Cat. 6, 2. Black; posterior tibiæ and tarsi yellow; wings milk-white; the anterior with numerous dark steel-blue round spots; the posterior *with a broad border on the outer margin*, and some spots on the anterior margin of the same colour. Length 10 lin.; exp. 20 lin. Hab. Sweden, Prussia, and, according to Turton, England.

H. atrata, Lepechin; *Altaica*, Fischer; Walk. Cat. 6, 1. Very like the preceding, but the spots of the anterior wings are less round, and connected together, forming broken bands, *and the border of the posterior wings is indistinct*, essentially only the apices of the veins being bordered with black; tibiæ yellow. Length 9 lin.; exp. 17 lin. Hab. Sweden, Russia.

Genus Agrypnia, Curtis.

Wings *not clothed with hair;* the anterior narrow, *very obliquely truncated at the extremity;* palpi short, broad, not hairy; *legs without spines;* discoidal cell of the anterior wings *long, narrow, triangular.*

Colour pale, scarcely spotted.

The case of the larvæ consists of fragments of root-fibres of equal length, arranged close together in a spiral *turned to the right.* They live in standing waters.

6. Agrypnia Pagetana, Curt. B. E. 540; Steph. Ill. 229, 1; Walk. Cat. 11, 1; *P. ægrota*, Burm.; *O. strigosa*, Ramb.

Dull straw-yellow, *the longitudinal veins of the anterior wings brownish towards the margin*, and the membrane between them sometimes rather dark; abdomen

above greyish brown. App. inf. ♂ bent upwards like a hook, *with a long thin tooth* articulated to the thickened base.

Length 5½ lin.; exp. 10 lin.

Hab. near Yarmouth.

The type from which Curtis's description was drawn up appears to have been accidentally pressed flat; besides this (which is now in the British Museum) I have seen two other specimens in Curtis's collection. In repose the wings lie flatter and in a less tectiform position than in the other genera.

A. picta, Kolen.; Walk. Cat. 12, 2; like the preceding in form, greyish brown, with the legs testaceous; the anterior wings very pale grey, with darker brownish dashes. Length 5½ lin.; exp. 10 lin. Hab. Sweden, Germany.

A third species, very similar in colouring to *A. Pagetana*, is found in Iceland.

Sub-family 2. Limnophilides.

Maxillary palpi of the males *three-jointed;* ocelli *present;* spurs variable in number (1, 3, 4; 1, 3, 3; 1, 2, 4; 1, 2, 2), *the anterior leg never with more than one spur;* antennæ as long as the wings.

Genus Limnophilus, Leach.

Joints of the palpi cylindrical and thin; wings sparingly clothed with hairs, the anterior narrow, *obliquely truncated at the apex;* spurs, 1, 3, 4; tibiæ spinose.

Case of the larvæ composed of vegetable fragments disposed, like the tiles of a roof, of small shells, sand or small

stones, and even sometimes of the cases of smaller *Phryganidæ* (which are then arranged in the same way as the vegetable fragments). They live in standing or slowly running water.

Sub-genus Glyphotælius, Stephens.

Apical margin of the anterior wings with a rounded emargination. Case formed of imbricated fragments of grass or wood.

7. Limnophilus pellucidus, Oliv.; Steph. Ill. 210, 1; Walk. Cat. 18, 2; *L. basalis*, Curtis; *L. emarginatus*, Curt. Phil. Mag. 122, 1 and 2.

Brownish; antennæ, palpi and legs paler; anterior wings yellowish-grey, spotted with brown; a narrow, rhombic fenestrated spot in the centre of the wing; a larger round spot about the anastomosis (which, however, may be entirely wanting, or broken up into a number of small dots); both spots vary much in form and size, and, when they unite, may form a large crescent (*L. basalis*, Curt.); the emarginate apex is bordered with white, with dark spots; on the anterior margin is a blackish pterostigma; posterior wings limpid, *with a brown apex, in which a paler spot not unfrequently occurs*. This species varies considerably; sometimes the anterior wings are almost uniformly pale brown.

Length 7 lin.; exp. 12 lin.

Hab. not rare in the summer around London, New Forest, Devonshire, Norfolk, Suffolk, Dover, Scotland, &c.

L. binervosus, Villers; *P. punctato-lineata*, De Geer;

G. umbraculum, Kolen.; Walk. Cat. 17, 1; *G. lævis*, Walk. Cat. 18, 3.

Anterior wings clay-coloured; *a fine black line* at the apex of the wing; *two black lines spotted with yellow* along the hinder margin, and an indistinct fenestrated spot in the middle of the wings; posterior wings pale grey, with their apex clay-coloured; body brownish; legs testaceous. This species is also sometimes spotted with brown like the preceding.

Length 10 lin.; exp. 18 lin. Hab. Sweden; Germany. There is a specimen without locality in the British Museum from Children's Collection. This is the largest of the European *Limnophilidæ*.

Subgenus Colpotaulius, Kolenati.

The outer margin of the posterior wings is strongly emarginate. Case?

8. L. Incisus, Curt. Phil. Mag. 124, 17; Steph. Ill. 228, 48; Walk. Cat. 23, 16; *L. vulsella*, Walk. Cat. 23, 17; *L. striolata*, Ramb.; *C. excisus*, Kolen.

Head and thorax reddish-yellow, clothed with darker hairs; abdomen greyish-brown; antennæ and legs testaceous; anterior wings narrow, *with a lanceolate apex*, clothed with fine hairs, straw-yellow; *the veins strong and with blackish punctures* (these points are formed essentially only by the black hairs which stand upon the veins at regular distances, but this is only distinct when strongly magnified); posterior wings limpid, slightly yellowish at the apex.

Length 3½ lin.; exp. 6 lin.

Subgenus GRAMMOTAULIUS, Kolenati.

Anterior wings pointed; posterior wings with a black longitudinal streak in the apex.

9. L. NITIDUS, Müll.; *L. lineola*, Schrank,; Walk. Cat. 19, 4; *L. gracilis*, Burm.

Entirely straw-yellow: prothorax with golden yellow hairs; posterior wings hyaline, with a black longitudinal streak in the apex as far as the anastomosis; the anterior wings *acutely pointed*. App. sup. ♂ foliaceous, oblong, *with the apex slightly notched* (Brauer, N. A. fig. 93).

Sometimes the anterior wings are sprinkled with small brownish spots, especially on the hinder margin.

Length 8 lin.; exp. 14 lin.

Hab. England. Both in Stephens and Curtis's Collections this species is not separated from the following one; by Curtis it is indicated as *L. striola*, Leach.

10. L. ATOMARIUS, F.; *L. lineola*, Steph. 213, 2; *L. strigosa*, Curt. Phil. Mag. 122, 3; *L. lineola* et *atomarius*, Walk. Cat. 19, 4 and 5.

Testaceous; abdomen above greyish-brown; anterior wings *obtusely* pointed, brownish-yellow, thickly sprinkled with small brown spots; the anterior margin, a spot which is often indistinct in the middle, and sometimes the anastomosis, remain unspotted; posterior wings hyaline, with a black longitudinal streak in the apex as far as the anastomosis. App. sup. ♂ foliaceous, oblong, *emarginate nearly to the base* (Brauer, N. A. fig. 95).

The coloration of the anterior wings varies considerably; either the spots disappear in part or entirely (the wings are then of a uniform dingy brownish-yellow), or the spots coalesce more and more (when the wings are dark brown, sprinkled with pale round spots).

Length 7 lin.; exp. 13 lin.

Hab. from May to September on marshes near London, in Devonshire, New Forest, and near Carlisle; in Scotland in July.

Subgenus CHÆTOTAULIUS, Kolenati.

Anterior wings narrow, dilated towards the obtusely truncated apex; a rhombic fenestrated spot in the middle; posterior wings in the ♂ with a black beard on the first *sector apicalis;* colour of the anterior wings yellow, with brown spots.

11. L. VITRATUS, De Geer; *P. lunaris*, Pict.; *L. nebulosus*, Curt. Phil. Mag. 123; Steph. Ill. 215, 10; *L. apicalis*, Curt. Phil. Mag. 123; *L. lunatus*, Curt. Phil. Mag. 123; Steph. Ill. 216, 11.

Testaceous; anterior wings yellow, their hinder half brown; an oblique but *not interrupted band* in the middle of the wing, a round spot about the anastomosis, and *a semilunar spot on the truncated margin*, white and transparent; all three stand half in the anterior, yellow, and half in the posterior, brown half of the wing; *pterostigma pale brown;* posterior wings hyaline, their apex yellow; in the ♂ the posterior margin of the last segment of the abdomen is *produced into a lobe* and bent inwards (Brauer, N. A. fig. 86).

Length 5 lin.; exp. 9 lin.

Hab. Very frequent on marshes round London, in Wales, the North of England, and Scotland.

L. subcentralis, Hagen; Brauer. Extremely similar to the preceding in size, form and coloration, but in the anterior wings the oblique white band is *broken into steps*, and usually united with the round spot about the anastomosis (which here possesses a brown pupil). App. anal. different (Brauer, N. A. fig. 90). Hab. Germany.

The cases of the larvæ of both (?) species consist of vegetable fragments, which are fixed upon them in a longitudinal position.

12. L. RHOMBICUS, L.; Steph. Ill. 214, 6; Walk. Cat. 24, 13; Pict.; Burm.; Kolen., &c.

Ochreous; the anterior wings greyish yellow, in the middle with a broad, oval, fenestrated spot placed obliquely, *and on each side a triangular, dark brown dash;* a roundish pale yellow spot, externally bordered with brown about the anastomosis; the posterior and *outer margin of the wing darker; a pterostigma* is not marked; posterior wings hyaline, with a yellow apex. The coloration of the wings varies (as also in the preceding species) according as the brown colour is more or less developed. App. anal., Brauer, N. A. figs. 91, 92.

Length 7 lin.; exp. 15 lin.

Hab. England and Scotland, in the middle of summer.

The case is formed of vegetable fragments, which are arranged transversely around it and closely pressed together,

so that it is sometimes nearly oval; for the pupa the orifices of the case are closed by a very regularly-formed lattice work.

A new English species, like *L. rhombicus*, but still larger, is contained in the British Museum. Another English species (*L. pavidus*, Hagen) in the same collection resembles *L. rhombicus* in form and size, but the app. anal. are different, and similar to those of the species of *Anabolia*.

13. L. MARMORATUS, Curt. Phil. Mag. 123; Steph. Ill. 214, 7; *L. discoidalis*, Curt. Phil. Mag. 122; Steph. Ill. 214, 5; *L. binotatus*, Curt. Phil. Mag. 122; Steph. Ill. 215, 8; *L. vitratus*, Walk. Cat. 20, 7; *L. vitrea*, Ramb.; *P. concentrica*, Zett.

Ochreous; the anterior wings greyish-yellow, with a rhombic fenestrated spot in the middle, and about the anastomosis a rather larger, irregular, roundish spot; *the veins of the anastomosis blackish-brown;* the posterior half of the wing brown; around the spots the colour is darker, and surrounds the apex of the wing as far as the *blackish brown pterostigma; small white points are more or less abundantly scattered in the brown colour;* posterior wings hyaline, with a yellow apex.

Length $5\frac{1}{2}$ lin.; exp. 12 lin.

Hab. about London, in Devonshire, &c., in July and August.

14. L. FLAVICORNIS, F.; Steph. Ill. 213, 3; Pict. &c.; *L. dorsalis*, Steph. Ill. 213, 4.

Testaceous; abdomen greyish-green; anterior wings pale yellowish-grey, with *numerous scattered small*

brown spots, especially on the apical portion and along the posterior margin; a rhombic fenestrated spot in the centre and a round spot about the anastomosis are only marked in reality by the neighbouring spots; venation testaceous, the anastomosis brown; *pterostigma not indicated;* posterior wings hyaline. App. anal., Brauer, N. A. figs. 88, 89.

This species varies considerably according to the strength and abundance of the spots.

Length 6 lin.; exp. 12 lin.

Hab. not rare in summer, in England and Scotland.

In Curtis's collection this species stands as *L. griseus.*

Case cylindrical, usually set regularly round with small shells, but sometimes also constructed of fragments of plants or wood.

Ch. nobilis, Kolen., is extremely similar to the preceding species in form, size and coloration; it is distinguished by a distinct blackish-brown pterostigma, and by the longitudinal veins being regularly punctured with brown. Hab. France, Switzerland. Curtis has also ticketed it as *L. griseus.*

15. L. STIGMA, Curt. Phil. Mag. 123; Steph. Ill. 216, 12; *L. fulva*, Ramb.

Testaceous; superior wings reddish-ochreous, closely sprinkled *with small red spots* like freckles; these are wanting in the marginal field, in the middle of the wing and around the anastomosis; pterostigma piceous; posterior wings yellowish, with the apex darker; the margin of the last segment in the ♂ produced into a *tongue-shaped process*, with the apex rolled up.

The only specimen before me (Rambur's type, which I have compared with Stephens's types) has no pterostigma. This and the somewhat longer and narrower wings form almost the sole differences between *L. stigma*, Steph., and *L. impura*, Ramb. (*stigmaticus*, Kolen.) The latter species, which is very abundant on the Continent, and variable in colour, was not noticed by me in the English collections. It now appears to me that a further examination must prove whether the two species should not be reduced to one.

Length 6 lin.; exp. 11½ lin.

Hab. near London and in the New Forest, in June.

16. L. AFFINIS, Steph. Cat. 3700.

Reddish-yellow; abdomen greyish-brown; anterior wings of a fine brownish-yellow, with a strong *pitchy-brown pterostigma;* along the truncated margin of the apex of the wing is a narrow *whitish crescent, internally margined with brown;* sometimes, especially in the females, faint, reddish, freckle-like spots occur in the posterior half and in the apical portion, where there also appears a rhombic, narrow spot in the middle and a round spot about the arculus; both these, however, are always indistinct, and but little paler than the ground colour of the wing.

Length 6 lin.; exp. 11 lin.

Hab. England.

In the British Museum this species is marked as above. Subsequently, in the "Illustrations," p. 215, Stephens has erroneously united it with *L. vitratus* (*nebulosus*).

17. L. ELEGANS, Curt. Phil. Mag. 123; B. E. 488; Steph. Ill. 215, 9; Walk. Cat. 22, 14.

Yellowish-brown; palpi and antennæ reddish; head and thorax brownish; abdomen ochreous; anterior wings shining, pale yellowish-brown, *with three long, white, straight longitudinal streaks*, the intermediate one somewhat the shortest, in the discoidal field; the base of the apical cells white; in the third and sixth (first sub-apical cell) only one white dot.

Length 6 lin.; exp. 11 lin.

Hab. New Forest, in June.

Of this strikingly marked species (the figure given by Curtis is very successful), I am only acquainted with females. Whether the posterior wings of the male are furnished with a beard I do not know; at any rate *L. elegans* differs remarkably from the other species, and perhaps forms a distinct group with the nearly allied *L. designatus*, Walk., from Arctic America.

Sub-genus Goniotaulius, Kolenati (partim).

Very similar to the preceding in form and marking; *the posterior wings of the male destitute of beard;* colour of the anterior wings whitish-grey, spotted with brown or black; the rhombic fenestrated spot is smaller, often indistinct; *the marking and coloration of the anterior wings differs very considerably in the same species*, according as the darker spots coalesce more or less, or even entirely.

Case of the larva cylindrical, straight, with the ends rounded off (pupa), constructed of small stones arranged regularly in mosaic.

18. L. griseus, L.; F.; Pict.; *L. fenestralis*, Curt. Phil. Mag. 123; Steph. Ill. 218, 17; *L. marginalis*, Steph. Ill. 218, 16; *L. bipunctatus*, Steph. Ill. 218,

18; *L. obliquus*, Steph. Ill. 219, 20; *L. luniger*, Steph. Ill. 219, 21; *L. variegata*, Ramb.

Reddish-grey; antennæ brown, with paler rings; mesothorax paler in the middle, with the sides blackish; abdomen blackish, with a yellowish longitudinal band below and on the sides; legs testaceous; anterior wings very narrow, whitish-grey, spotted with black and brown, in such a manner that, especially toward the posterior margin and the apex, numerous brown and white spots alternate; the fenestrated spot is milk white; around the anastomosis there is an irregular pale spot, which runs to the anterior margin and there encloses the pterostigma; *venation brown and distinct*. The described coloration is the ordinary form of the female; if the dark spots coalesce entirely, the anterior wings become uniformly black; only the base of the marginal field, the fenestrated spot, and the spot about the anastomosis, remaining white. The males have the anterior wings for the most part uniformly brownish-grey, with a few scattered, small, darker points on the posterior margin and at the apex; the fenestrated spot is narrower, and often indistinct; the spot around the anastomosis is only marked externally or not at all; the pterostigma is smaller, brownish. Between the colourings above described there are innumerable intermediate steps. Posterior wings pale grey, with the apex rather darker. App. sup. ♂ spoon-shaped, yellow; *the margin of the last segment cut off straight, smooth*, grey (vid. Brauer, N. A. fig. 76, 77).

Length 5 lin.; exp. 10 lin.

Hab. England, near London, New Forest, Cambridge,

Devonshire, Scotland (probably generally distributed); not uncommon from June to August.

19. L. BIPUNCTATUS, Curt. Phil. Mag. 123; *L. griseus*, Steph. Ill. 217, 13; *L. obscura*, Ramb.

Rusty grey; antennæ rusty, with paler wings; thorax and abdomen like *L. griseus;* anterior wings rusty, spotted with brown; the fenestrated spot, a stripe about the anastomosis, and a spot within and close to the piceous pterostigma, are yellow; *the brown venation (as well as the membrane) is covered with numerous small paler spots;* a tolerably dense and distinct hairy coat covers the wings. The disposition of the colouring and marking of the wings is the same as in *L. griseus*, and varies in the same way. Posterior wings smoky grey, with a yellowish-brown apex. App. sup. ♂ triangular, bent together inwards, yellow; *the margin of the last segment is bi-emarginate, with a short, thick, black brush* (vid. Brauer, N. A. fig. 78, 79).

Length 6 lin.; exp. 11 lin.

Hab. London, New Forest and Scotland; in July, not very abundant.

20. L. AURICULA, Curt. Phil. Mag. 124; Steph. Ill. 220, 22; *L. obscurus*, Curt. Phil. Mag. 124; Steph. Ill. 220, 24; *L. geminus*, Steph. Ill. 220, 23; *L. signatus*, Steph. Ill. 219, 19; *P. nigridorsa*, Pict; *L. guttata*, Ramb.; *G. fenestratus*, Kolen.

Brown; head, antennæ and abdomen above darker; anterior wings dark ochreous, with the pterostigma pale pitchy brown; *the fenestrated spot is formed by two roundish spots lying obliquely one over the other;*

a third, of the same size, is situated upon the thyridium; externally, close to the anastomosis, in the bases of the apical cells, there are six pale spots, two of which are close together in the third apical cell; veins slightly clothed with dark hairs; posterior wings smoky grey, with the apex brownish. *App. sup.* ♂ *finger-like, bent upwards;* between them the posterior margin of the last segment is produced into a roundish process (Brauer, N. A. fig. 81 [♀]). This species also varies considerably; in the males the pale spots of the anterior wings are usually entirely wanting; the females are sometimes very similar in colouring and marking to the males of *L. griseus*, and Stephens has mixed the two species in *L. signatus*.

Length 3½ lin.; exp. 6 lin.

Hab. London, Carlisle, Devonshire, New Forest, Suffolk, Hertford, Ripley, Scotland (probably everywhere); not rare from June to August.

21. L. COSTALIS, Steph. Ill. 217, 14; *L. affinis*, Curt. Phil. Mag. 123; Steph. Ill. 217, 15; *G. anastomosis*, Kolen.

Yellowish grey; body brownish, the antennæ with paler rings; anterior wings ochreous, somewhat brownish, clothed with light yellow hairs; pterostigma pitchy brown; *a brown longitudinal dash, sprinkled with paler points, reaches from the base towards the anastomosis*, but is usually (like the narrow, oblique fenestrated spot) only distinct when the wings are closed; the veins of the anastomosis brown, *the longitudinal veins spotted with brown and yellow,*

along the posterior margin the brown spots stand closer together; posterior wings smoky-grey, with an indistinct yellowish-brown pterostigma. App. sup. ♂ *triangular*, yellow; margin of the last segment straightly truncated. The coloration of the anterior wings varies according to the abundance of the spots.

Length 5 lin.; exp. 9 lin.

Hab. London, Whittlesea Mere, New Forest, Kent, Suffolk, and Scotland in June and July; not common.

Subgenus GONITAULIUS, Kolenati (partim).

Very similar to the preceding in form; *anterior wings without a fenestrated spot;* in the males the beard of the posterior wings is wanting; coloration of the anterior wings yellow, with the posterior half sprinkled with brown.

Case horn-shaped, slightly curved, very regularly constructed of fine grains of sand.

† Fifth apical cell of the anterior wing acute, not reaching the anastomosis.

22. L. VITTATUS, F.; Kolen.; Pict.; Ramb.; Steph. Ill. 225, 39; *L. elegans*, Pict.; Ramb.; *L. ochraceus*, Steph. Ill. 223, 34; *L. consobrinus*, Steph. Ill. 224, 35; *L. substrigosus*, Steph. Ill. 224, 37; *L. bipartitus*, Steph. Ill. 225, 38; *L. nigrivittatus*, Steph. Ill. 225, 40.

Ochreous; antennæ with paler rings; head and thorax reddish above; abdomen above brownish-grey; anterior wings brownish-yellow; *from the apex nearly to the base runs a nearly straight, sharply defined brown streak;* the portion of the wing situated behind

this is more or less covered with brown punctures; posterior wings hyaline, with an indistinct yellow pterostigma.

The markings of the anterior wings vary very considerably, according as the brown streak is more or less sharply and broadly marked, interrupted, or even completely broken up into a series of small dots. The coloration of the portion of the wing behind the streak is also very variable; usually there is a triangular brown dash on the apical margin, and the posterior margin is spotless; but the former may also be replaced by numerous points, or disappear entirely. The pterostigma of the anterior wings is brownish, or entirely wanting.

Varieties in which the brown line of the anterior wings is entirely deficient, or partially replaced by points, form the following species:—*G. flavus*, Kolen.; *L. consobrinus*, Curt. Phil. Mag. 124; *L. terminalis*, Curt. Phil. Mag. 124; *L. notatus*, Steph. Ill. 224, 36; *L. præustus*, Steph. Ill. 226, 41; and *L. flavus*, Steph. Ill. 226, 42.

This species may, however, always be easily distinguished from all others by the *acute fifth apical cell not reaching the anastomosis.*

Length 4 lin.; exp. $7\frac{1}{2}$ lin.

Hab. London, New Forest, Hertford, Coombe Wood, Dover; not uncommon from June to December.

†† Fifth apical cell of the anterior wing truncated, as long as the others, reaching the anastomosis.

23. L. CENTRALIS, Curt. Phil. Mag. 124; Steph. Ill. 227, 43 (♀); *L. punctatus*, Steph. Ill. 227, 44 (♂); *L.*

elongatus, Steph. Ill. 227, 45 (♀); *L. fuliginosus*, Steph. Ill. 227, 46 (♂); *L. ustulatus*, Steph. Ill. 228, 47 (var.); *P. flava*, Pict.; *L. nebulosa*, Ramb.

Ochreous; antennæ, head and thorax somewhat reddish; the anterior wings have a brown dash from the apex to the anastomosis, and another along the whole posterior margin, the two being sometimes connected at the anastomosis, *but still so that the apical margin of the wing remains free;* pterostigma wanting; posterior wings hyaline, with the anterior margin yellow. App. sup. ♂ *small, triangular*, not projecting beyond the extremity of the abdomen, closely applied upon the App. infer.

On the whole, in form and coloring, this species is very similar to *L. vittatus*, and especially to its variety *L. flavus*, in the colouring of the anterior wings. *L. centralis* is, however, easily distinguished by the *form and length of the fifth apical cell*, and by its more dense clothing of yellow hair upon the anterior wings; in *L. vittatus*, also, *the brown dash on the apical margin is always below, and in L. centralis always above, the brown line.*

Varieties in which the brown dashes break up into numerous larger or smaller, and sometimes much darker spots, which may then also occupy the entire apical margin, are described as *L. nebulosa*, Ramb.; and *L. ustulata*, Steph.

Length 4½ lin.; exp. 8 lin.

Hab. London; not rare in June and July.

24. L. FLAVESCENS, Steph. Ill. 223, 33; *L. ignavus*, Hagen.

Ochreous; antennæ reddish-yellow, with paler rings; abdomen brownish-grey; head and thorax chestnut brown; *anterior wings yellowish-brown*, with a thin covering of hair, usually darker along the apical and hinder margins; pterostigma not marked, or light ash colour; a small spot upon the thyridium and a similar one opposite to it on the hinder margin, white and translucent; posterior wings hyaline, light grey, with the apex brownish. App. sup. ♂ *large, spoon-shaped*, projecting beyond the extremity of the abdomen.

Sometimes the brown coloration of the apical and posterior margins of the wing breaks up into scattered brown points.

Length 5 lin.; exp. 9 lin.

Hab. London and Ripley, in June: not common.

Subgenus Desmotaulius, Kolenati.

The species belonging here are very nearly allied to the preceding, and are distinguished essentially only by the *more parabolic* form of the apex of the anterior wings, and by a *longer and denser clothing of hair* upon them, especially on the veins near the posterior margin. Coloration of the anterior wings brown, spotted with yellow, or the reverse.

Case as in *Goniotaulius*.

25. L. hirsutus, Pict.; *L. irroratus*, Steph. Ill. 223, 32.

Brownish red; antennæ annulated with yellow; abdomen beneath and legs testaceous; anterior wings *yellowish-grey, closely sprinkled with small brown points;* posterior margin and a streak before it darker; posterior wings hyaline, greyish, with the

apex scarcely darker; the margin of the last segment in the male *deeply emarginate, with a black brush, and on each side with a cylindrical process,* which appertains to the hinder margin and not to the App. anales. The coloration and marking of the anterior wings is remarkably constant in this species.

Length 5½ lin.; exp. 10 lin.

Hab. London, in June; rare.

26. L. SPARSUS, Curt. Phil. Mag. 123; Steph. Ill. 223, 31; *L. tenebricus*, Curt. Phil. Mag. 123; Steph. Ill. 222, 29; *L. vinculum*, Curt. Phil. Mag. 124; Steph. Ill. 222, 28; *L. fuscus*, Steph. Ill. 221, 25; *L. punctatissimus*, Steph. 221, 27; *L. fuscatus*, Steph. 222, 30; Ramb.; *D. Megerlei*, Kolen.

Chestnut brown; antennæ annulated with yellow; abdomen greyish brown; legs dark testaceous, the intermediate tibiæ annulated with black; anterior wings *chestnut brown, closely sprinkled with small light yellow dots;* on the hinder margin and within close to the brown pterostigma there is a large yellow spot; along the hinder margin two darker streaks; posterior wings hyaline, grey, *with the apex dark brown;* the margin of the last segment in the male produced into *a roundish lobe, with a black brush at the apex.*

The coloration of the anterior wings is remarkably variable, according as the yellow dots are more or less numerous and close together; sometimes they are entirely wanting, with the exception of the spot on the hinder margin and near the pterostigma; the wings are then almost of a uniform dark brown, and essentially

alter the appearance of the insect; on the other hand they are sometimes so numerous that the ground colour of the wing appears to be light yellow; the pterostigma also is sometimes wanting.

Length 5 lin.; exp. 9 lin.

Hab. London, Hertford, New Forest, Devonshire, North of England, Battersea, Coombe Wood, Ripley, Dorset, Wiltshire and Suffolk; common in June and July.

27. L. FUMIGATUS, Germar; Kolen.; *L. fuscicornis*, Ramb.

Dark brown; thorax clothed with rather long hairs; antennæ rusty red; lower surface rather paler; legs testaceous; *anterior wings uniform smoky brown*, with the hinder margin darker; thyridium whitish; posterior wings grey, hyaline, with the apex yellowish grey; the margin of the last segment in the male rounded.

Length $6\frac{1}{2}$ lin.; exp. $12\frac{1}{2}$ lin.

Hab. England; British Museum.

Genus ANABOLIA, Stephens.

Stathmophorus, Kolenati.

Joints of the palpi cylindrical, thin; wings *naked, shining*, the anterior with the apex *parabolic*; spurs 1, 3, 4; tibiæ spinose.

Case constructed of small stones, cylindrical, with the head end a little widened; one or two small twigs or fragments of straw are attached longitudinally to the case as balances, to lighten it in swimming and keep it in equilibrium.

As already remarked by Stephens, this genus, which is well marked in its habit, is difficult to distinguish from

Limnophilus. To the characters above given may be added (Brauer, N. A.) that the fourth apical cell of the posterior wings is as broad as the second; in *Limnophilus* it is narrower.

The coloration is uniform brown.

28. ANABOLIA NERVOSA, Steph. Ill. 230, 1; *A. lurida*, Steph. 230, 2; *P. fusca*, Pict.; Ramb.

Brown; head reddish yellow; legs testaceous; anterior wings yellowish brown, the marginal vein surrounded by a darker tint; thyridium whitish; posterior wings hyaline, with the apex yellowish grey. App. sup. ♂ *broad triangular, with the apex curved inwards.*

Length 5½ lin.; exp. 10 lin.

Hab. London, Hertford, Dover, Ramsgate, New Forest, Scotland; common in August and September.

29. A. DESTITUTA, Kolen.; *A. nigricornis*, Steph. Ill. 232, 6.

Testaceous; antennæ piceous; head and thorax reddish brown; anterior wings ochreous, with the thyridium and a spot on the inner margin white; posterior wings hyaline. App. anal. ♂ *spoon-shaped, long, pointed.*

Length 4 lin.; exp. 6½ lin.

Hab. London in June; not common.

30. A. DUBIA, Steph. Ill. 232, 7.

"Reddish-ochreous; antennæ annulated with brown; anterior wings very pubescent, slightly granulated, ochreous-brown, with a few paler dots; posterior wings hyaline, with the apex distinctly ochreous; legs pale ochreous."

Length 5½ lin.; exp. 12 lin. (Stephens).
Hab. London, in June; not common.

I have not this species before me. When I examined the type I declared it to be a new *Anabolia*, not described elsewhere, and which had not previously occurred to me. The description is greatly in favour of *A. dubia* being the *Phacopteryx granulata*, Kolen.; yet I believe that in comparing the types I found differences between them. The species requires further investigation. I have noted that in Curtis's collection the *Phac. granulata*, Kolen., is ticketed as *L. brevipennis;* it consequently occurs in England.

Genus Stenophylax, Kolenati.

Hallesus, Stephens (partim).

Joints of the palpi cylindrical, thin; first joint of the antennæ shorter than the head; *wings pretty thickly clothed with short hairs*, the *anterior much widened* towards the apex and *obtusely rounded off;* spurs 1, 3, 4; tibiæ with short spines.

Case rather irregularly constructed of small stony fragments, cylindrical, with the head-end rather wider and surrounded by larger stones.

This genus also is very nearly related to *Limnophilus*, and has been re-united therewith by Brauer. Its habit is peculiar, and differs in the broad obtusely rounded anterior wings.

The species belonging here are excessively similar in form and coloration, and are often confounded together. By the app. anal. I now distinguish sixteen European species. When I examined the types of Stephens and Curtis, a portion of these species, especially those described by Pictet, were still

unknown to me. My determination of the English species will therefore require further confirmation to render it perfectly certain.

31. Stenophylax Vibex, Curt. Phil. Mag. 125; *H. hieroglyphicus*, Steph. Ill. 210, 5; *S. striatus*, Kolen.; Ramb.

Reddish-ochreous; mesothorax above pitchy brown on each side; anterior wings ochreous, closely sprinkled with reddish freckles, with the exception of the anterior and posterior margins; *anterior branch of the ramus thyrifer blackish, as far as the fifth apical cell.* App. anal. ♂ *triangular, large, internally hollowed out like a spoon, with the acute apex curved inwards;* margin of the last segment *straightly truncated* (vide Brauer, N. A. fig. 58, 59).

Length 7½ lin.; exp. 13 lin.

Hab. London, Ripley, Albury, in August and September.

This species is perfectly certain for England. Perhaps it would be advisable to adopt Stephens's name, as Curtis has ticketed the following species as "*Vibex*, Curt.," in Pictet's types, and his description in the Phil. Mag. is insufficient. In Curtis's collection the above species stands as *H. Vibex*.

32. S. Striatus, Pict.; *H. tenebrosus*, Curt. Coll.; *H. Vibex*, Steph. Ill. 209, 3.

Extremely similar to the preceding species in colour and form. App. anal. ♂ very different, *small, spoon-shaped, rounded off; the hinder margin of the last segment hangs down in the form of a long broad lobe, with a dense black brush,* between the app. anal. sup.

Length 6 lin.; exp. 11½ lin.

Hab. London, Devonshire, Norfolk, New Forest, in autumn. Requires further confirmation for England.

33. S. LATERALIS, Steph. Ill. 210, 6; *H. latipennis*, Steph. Ill. 209, 4; *P. pilosa*, Pict.

In coloration and form extremely similar to the preceding, but the freckles are larger and also distributed upon the posterior margin; the anterior branch of the ramus thyrifer not darker than the other veins. App. anal. ♂ *small, spoon-shaped, rounded; the hinder margin of the last segment straightly truncated, with a black brush in the middle.*

Length 6 lin.; exp. 11½ lin.

Hab. London, Hertford, Ripley, New Forest, Devonshire, in August and September. Requires further confirmation for England.

34. S. TESTACEUS, Pict.; *H. cingulatus*, Steph. Ill. 209, 2.

Form of the preceding species; colour ochreous; anterior and posterior margins of the anterior wings as dark as the rest; the anterior wings appear of one colour, small spots making their appearance only under a strong magnifying power. App. anal. ♂ *curved like a post-horn, produced above into a sharp point, like a reversed funnel.*

Length 5½ lin.; exp. 10 lin.

Hab. Devonshire, in July.

Requires further confirmation. When I examined Stephens's type, Pictet's *Phr. testacea* was still unknown to me; according to my notes, *H. cingulatus* was a *Stenophylax* new to me; with app. anal. like those described. I do not

see in Pictet's species the black colouring of the abdominal segments described by Stephens.

35. S. PANTHERINUS, Pict.; *H. latipennis*, Curt. Phil. Mag. 125.

Brown; lower surface and legs testaceous; first joint of the antennæ yellowish-brown; thorax blackish-brown; anterior wings mouse-grey, with yellow longitudinal lines; their apex *parabolic*. App. anal. infer. ♂ *thick, obtuse, running straight upwards and inwards, rounded off at the apex, and clavate* (see Brauer, N. A. fig. 56, 57).

Length 8 lin.; exp. 15 lin.

Hab. England, Coll. Curtis. Requires further confirmation.

36. S. STELLATUS, Curt. Phil. Mag. 125; Steph. Ill. 210, 7; *Ph. nigricornis*, Pict.; *S. arcatus*, Kolen., Brauer.

Brown; lower surface and legs testaceous; first joint of the antennæ yellowish-brown; thorax yellowish-brown in the middle, with grey hoariness; anterior wings striped with dull greyish-brown and pale grey, their apex *nearly circular*. App. anal. infer. ♂ *produced into a long, fine point* (vide Brauer, N. A. fig. 52, 53).

Length 7½ lin.; exp. 14 lin.

Hab. London, Devonshire, Dorsetshire, Isle of Wight; rare.

Genus HALLESUS, Stephens.

Anabolia, Stephens (partim).

Joints of the palpi cylindrical, thin; first joint of the an-

tennæ shorter than the head; wings *nearly naked, thinly clothed with very short hairs, the anterior very much dilated towards the apex* and obtusely rounded; spurs 1, 3, 3; tibiæ with few and short spines.

Case constructed of fragments of leaves, cut into a round form by the larva and laid upon each other like tiles, rather irregular; the larvæ live in shallow, rapidly running water.

37. HALLESUS DIGITATUS, Schrk.; Pict.; Steph. Ill. 208, 1; *L. radiatus*, Curt. Phil. Mag. 125; *L. hieroglyphicus*, Curt. Phil. Mag. 125.

Yellowish-brown; thorax darker on each side above; anterior wings *yellowish-grey; all the veins with darker borders; grey, jagged longitudinal streaks in the cells;* posterior wings hyaline, grey, yellowish at the apex (vide Brauer, N. A. fig. 47).

Length 8 lin.; exp. 15 lin.

Hab. Hertford, Ripley, Devonshire, Carlisle, Scotland, Suffolk, New Forest. Very common in autumn.

38. H. FLAVIPENNIS, Steph. Ill. 231, 5.

Ochreous; antennæ yellowish-brown; vertex yellowish-red; anterior wings yellowish-grey, slightly clothed with yellow hairs; *posterior margin of the last segment (♂) straightly truncated, with a black brush, above which is an oval swelling, with a black brush in front.* App. anal. sup. ♂ small, roundish, yellow.

Length 4½ lin.; exp. 7½ lin.

Hab. Devonshire, in June; rare.

When I examined Stephens's types I was unable to find in the app. anal. ♂ and ♀ of *A. testacea*, Ill. 231, 3, and

A. annulata, ♀, Ill. 231, 4, any difference from *H. flavipennis;* only both are rather larger. I have since become acquainted with two nearly related species, *H. flavipennis*, Pict., and *H. flavipennis*, Kolen., Brauer; consequently this statement with regard to *A. testacea* and *A. annulata* will require further confirmation.

Genus Chætopteryx, Stephens.

Joints of the palpi thin, cylindrical; first joint of the antennæ shorter than the head; anterior wings short, broad, obtusely rounded; *in the separate cells there stand several rows of raised dots; upon each dot and upon the veins there stand single long hairs;* from both these circumstances the wings acquire a peculiar granular appearance; spurs 1, 3, 3; titiæ with few and short spines.

Case cylindrical, with fragments of plants fastened lengthwise round it. The larvæ live in quickly running water.

39. Chætopteryx villosa, F.; Steph. Ill. 233, 1; Pict.; Kolen.

Reddish yellow; antennæ darker; abdomen and legs testaceous; wings brownish-yellow, covered with long brown hairs; *in the apical cells more than two* (3—4) *rows of dots;* posterior margin of the last segment in the male straightly truncated. App. anal. sup. large, hollowed out like a boat (vide Brauer, N. A. fig. 42).

Length 6 lin.; exp. 11 lin.

Hab. London, Hertford; not rare in July and August.

40. C. tuberculosa, Pict.; *C. brevipennis*, Steph. Ill. 233, 2; *C. echinata*, Curt. Coll.

Reddish yellow; antennæ and abdomen darker, legs testaceous; wings brownish-yellow, clothed with long brown hairs, *with only two rows of dots in the apical cells;* posterior margin of the last segment in the male produced in the middle into a roundish lobe. App. anal. sup. small, spoon-shaped.

Length 4 lin.; exp. $7\frac{1}{2}$ lin.

Hab. London, Hertford, Ripley, Guildford, Suffolk, Cambridgeshire; common.

Genus Ecclisopteryx, Kolenati.

With the same characters and habit as *Hallesus*, but only 1, 2, 3 spurs; *the male has, at the base of the posterior wings, a narrow, long, folded pouch, in which a pencil of hairs is concealed.* However, some species of *Hallesus* exhibit a similar pouch.

Case?

41. Ecclisopteryx guttata, Pict.; *E. Dalecarlica*, Kolen.; *L. cœnosus?* Curt. Phil. Mag. 123; Steph. Ill. 221, 26.

Smoky brown; the antennæ darker, with paler rings; thorax reddish in the middle above; anterior wings with a greasy lustre, greyish-brown, with few and short hairs, and with a few paler dots on the hinder margin and in the apical cells; pterostigma darker; posterior wings hyaline, grey; legs testaceous, thighs and tarsi darker (vide Brauer, N. A. fig. 41).

Length 5 lin.; exp. $8\frac{1}{2}$ lin.

Hab. England.

I have an English specimen before me. This species is wanting in Stephens's Collection. I regarded Curtis's *L.*

cœnosus as a new *Hallesus*, but am now inclined to think that it belongs here.

Genus Enoicyla, Rambur.

The same characters as *Chætopteryx*, but only 1, 2, 2 spurs. *The females are apterous*, and constitute the genus *Dromophila*, von Heyden.

Case cylindrical, constructed of fine sand. The larvæ live out of the water upon the roots of trees.

Enoicyla pusilla, Burm.; *E. sylvatica*, Ramb.; *Ptyopteryx Reichenbachii*, Kolen.; *Dromophila montana*, von Heyden (♀).

Black; legs testaceous; thighs as far as towards the knees, the tips of the tibiæ and the tarsi blackish; wings hyaline, with yellow down; the veins strong and covered with longer hair.

Length 3 lin.; exp. 6 lin.

Hab. France, Germany; very probably also in England.

Genus Apatania, Kolenati.

The same characters as *Hallesus*, but 1, 2, 4 spurs; wings more closely and strongly hairy; spurs small.

Case? The larvæ probably live in swiftly running streams.

42. Apatania vestita, Kolen.

Black; legs testaceous, with the basal half of the thighs black; wings greyish-brown, the anterior covered with a dense yellow down.

Length $3\frac{1}{2}$ lin.; exp. $6\frac{1}{2}$ lin.

Hab. England; Coll. Newman.

Sub-Family III. Sericostomides.

Maxillary palpi of the males two or three-jointed, strongly hairy, broadly curved upwards; maxillary palpi of the females five-jointed, with the basal joints thick, hairy; *ocelli wanting;* spurs variable in number (2, 2, 4; 2, 4, 4; 2, 3, 3; 2, 2, 2); *the anterior leg always with two spurs;* antennæ usually as long as the wings, strong, the first joint thicker and usually long, hairy; *wings densely and strongly hairy;* legs almost destitute of spines.

Cases constructed of sand, swimming freely; the larvæ probably always live in running water of no great depth.

The *Sericostomides*, by the remarkable variety in their structure, constitute the chamber of curiosities amongst the *Phryganidæ*, as in almost every great family of insects nature has selected one group in which to develope her wealth of forms.

Genus Sericostoma, Latreille; Stephens.

Potamaria, Leach.

Maxillary palpi of the males large, spoon-shaped, closing together *and thus covering the face with a mask*, which is clothed externally with distant, and internally with long, curved, closely approximated hairs; labial palpi of the males with a long basal joint; antennæ strong, not so long as the wings, the first joint thick, *shorter than the head;* wings densely clothed with hairs, narrow, the anterior with an elliptical apex; the posterior of equal breadth, but considerably shorter; spurs 2, 2, 4; tibiæ without spines.

Case constructed of fine sand, conical, with the tail-end slightly curved. The larvæ live in rapid brooks.

43. Sericostoma Spencii, Steph. Ill. 184, 1; *S. Latreillii*, Curt. Phil. Mag. 214; *S. collara*, Pict.; Ramb.; Kolen.; *Potamaria assimilis*, Steph. Ill. 183, 2 (♀); *P. analis*, Steph. Ill. 183, 1, tab. 34, 4 (♀ var. alis griseo-variegatis); *P. hyalina*, Steph. Ill. 183, 3 (♀ with the wings deprived of hairs).

Black; antennæ brown, not annulated; vertex and prothorax clothed with golden yellow hairs; legs brownish, tibiæ and tarsi of the four posterior legs testaceous; wings clothed with golden brown hairs, the posterior darker, blackish; in the females the anterior wings are sometimes spotted with grey (vide Brauer, N. A. fig. 35).

Length 5 lin.; exp. 9 lin.

Hab. New Forest, Brockenhurst, West of England, South Wales, Carlisle, Scotland, Devonshire, and near London; in June and July.

I am now acquainted with eight very similar European species, some of which probably occur in England. I have hitherto only been able to distinguish the males with certainty. The best characters are furnished by the colour of the antennæ and legs (especially the anterior) and more particularly by the app. anales. Amongst the latter this applies especially to two narrow sheaths, forked at the apex, situated near the penis; their proportions are very different in the different species, and the English species must be tested by these characters. In *S. Spencii* the points of the fork are of different lengths, the lower being shorter.

Genus Notidobia, Stephens.

Maxillary palpi of the males three-jointed, spoon-shaped,

bent upwards, *small, not closing together*, only clothed with hair on the outside; labial palpi of the males with a long basal joint; antennæ stout, not so long as the wings, the first joint thick, *shorter than the head;* wings densely clothed with hair, narrow, with an obtusely rounded apex; posterior of the same breadth as the anterior, but considerably shorter; spurs 2, 2, 4; tibiæ without spines.

Case constructed of fine sand, nearly cylindrical, slightly curved. In the anterior wings the first apical cell reaches nearly to the base of the discoidal cell (which is not the case in *Sericostoma*); in the posterior wings the discoidal cell is closed (open in *Sericostoma*).

44. Notidobia ciliaris, L.; Kolen.; *N. atrata*, F.; Pict.; Steph. Ill. 186, 1.

Black; strongly hairy; legs testaceous, with the thighs darker.

Length 4 lin.; exp. $7\frac{1}{2}$ lin.

Hab. Hertford, New Forest, in June; not very rare.

Genus Goëra, Hoffmansegg, Stephens.

Trichostoma, Pict.; *Lasiostoma*, Ramb.; *Spathidopteryx*, Kolen.

Maxillary palpi of the male two- (?) jointed, spoon-shaped, bent upwards, *not closing together, densely clothed on the outside with clavate hairs;* labial palpi of the males with a short basal joint; antennæ stout, not so long as the wings, the first joint thick, straight, *longer than the head;* wings densely clothed with hair, broad, obtusely rounded at the apex; the posterior of equal breadth with the anterior, but rather shorter; anterior wings near the hinder margin *with a*

naked cell circumscribed by a circular vein; spurs 2, 4, 4; tibiæ without spines.

Case irregularly constructed of small stones, smooth, tubular, nearly uniform in width, with larger stones affixed to the outside on each side. The larva lives in swiftly running brooks.

45. Goëra capillata, P.; *G. flavipes*, Steph. Ill. 187, 2 (♂); Curt. Phil. Mag. 215; Ent. Mag. I. 189; *G. pilosa*, Steph. Ill. 187, 1 (♀); *L. fulvum*, Ramb.
Yellowish brown, clothed with golden yellow hairs; antennæ brown, with the basal joint paler; anterior wings pale golden brown; posterior wings ashy grey.
Length 5 lin.; exp. 8 lin.
Hab. London, Hertford, Ripley, from June to September; common.

46. G. fuscicornis, P.; *G. vulgata*, Steph. Ill. 188, 3.
Black, clothed with ochreous hairs; antennæ darker; anterior wings pale straw yellow; posterior wings greyish yellow.
Length 3½ lin.; exp. 6 lin.
Hab. London and Devonshire, in June; not common.

I cannot separate the two species by certain structural characters; but as, according to Pictet, the larvæ are different, I have not felt justified in uniting them.

Genus Silo, Curtis.

Trichostoma, Pict.; *Aspatherium*, Kolen.

The same characters as for *Goëra, but the naked circular cell is wanting in the anterior wings;* the basal joint of the

antennæ is still longer; in the male the hinder wings have a longitudinal pinched fold not far from the anterior margin, traversing the veins and forming a sort of longitudinal pouch, which is beset with coarser, clavate hairs.

Case as in *Goëra*. The larva is remarkable as being the victim of an ichneumon (*Agriotypus armatus*) reared by Dr. Kriechbaumer.

47. Silo pallipes, Curt.; Steph. Ill. 186, 1; *S. minutus*, Walk. Cat. 93, 1; *T. picicorne*, Pict.; *Asp. fusci-corne*, Kolen.

Black, densely clothed with hairs; anterior wings brownish black, with a silky lustre; legs testaceous.

Length 3 lin.; exp. 5½ lin.

Hab. Hertford, in June and July; Lewisham, common on hedges at the end of May.

There are about eight species of the genus *Silo* in Europe; they are for the most part undescribed and not easily separated; some of them will probably occur in England. The app. anal. ♂ have hitherto furnished me with the most certain characters.

Genus Mormonia, Curtis, Stephens.

Goëra, Burm., Kolen.; *Lepidostoma*, Ramb.; *Sericostoma*, Pict.

Maxillary palpi of the males 2-(?) jointed, straight, thick, with their extremity dilated into a club above, verrucose, densely clothed with short hairs; antennæ thin, longer than the wings, *the first joint much longer than the head* (longer in the females than in the males), thick, strongly hairy; wings narrow, with the apex elliptical, *clothed with erect*

hairs, especially the veins; the anterior wings of the female have a fork less than those of the males; spurs 2, 4, 4; tibiæ without spines.

Case conical, somewhat curved, constructed of sand.

48. Mormonia hirta, F.; *M. nigromaculata*, Steph. Ill. 189, 1, tab. 32, 2 (♂); *M. hirta*, Steph. Ill. 189, 2 (♀); *M. immaculata*, Steph. Ill. 189, 3 (♀ rubbed); *G. hirta*, Curt. Phil. Mag. 215 (♀); *M. gracilicornis* and *M. immaculicornis*, Curt. Phil. Mag. 215 (♂); *Lep. squamulosum*, Ramb. (♂); *G. hirta*, Kolen.

Ashy grey; antennæ pale yellow, annulated with brown, with the basal joint darker; wings grey, clothed with light brown hairs; legs testaceous; the anterior wings and the basal joint of the antennæ in the male are strongly clothed with black, clavate hairs, so that their covering resembles the scales of the *Lepidoptera; the first apical cell in the anterior wings is as long as the others.*

Length $3\frac{1}{2}$ lin.; exp. $7\frac{1}{2}$ lin.

Hab. London, Devonshire, Hertford, Ripley, New Forest, Oxford, in June; not uncommon.

49. M. irrorata, Curt. Phil. Mag. 215; Steph. Ill. 188, 4; *M. minor*, Steph. Ill. 189, 4.

Greyish-yellow; basal joint of the antennæ darker; anterior wings ochreous, densely clothed with long hairs; legs testaceous; *first apical cell of the anterior wings much longer than the others.*

Length 2 lin.; exp. 4 lin.

Hab. Devonshire, in June.

Genus Brachycentrus, Curtis, Stephens.

Pogonostoma, Ramb.; *Hydronautia*, Kolen.

Maxillary palpi of the males 2- (?) jointed, short, slender, curved, strongly hairy; antennæ as long as the wings, *basal joint as long as the head;* wings elliptical at the apex, densely clothed with hair; spurs 2, 3, 3; tibiæ without spines; spurs very short.

Case conical, straight, composed of sand; the larvæ live in marshes, and even in the brackish water at the mouths of rivers.

50. Brachycentrus subnubilus, Curt. Phil. Mag. 215; Steph. Ill. 182, 1 (♀); *B. concolor*, Steph. Ill. 182, 2 (♂); *B. costalis*, Steph. Ill. 182, 3 (♀ rubbed); *Ph. tincta*, Zett.; *P. vernum*, Ramb.; *H. maculata*, Kolen.

Black, clothed with grey hairs; anterior wings grey, with large yellowish spots; posterior wings brownish-grey; legs yellowish-white, thighs grey.

Length $3\frac{1}{2}$ lin.; exp. $6\frac{1}{2}$ lin.

Hab. London, Devonshire and New Forest, in June.

Sub-Family IV. Hydroptilides.

Maxillary palpi of the males 4-jointed; *labial palpi with the apical joint thickened;* antennæ shorter than the wings, *thick, moniliform;* wings very narrow, *pointed, lanceolate,* clothed with long hairs; *posterior wings not folded;* anterior legs without spurs; number of spurs variable (0, 2, 4; 0, 3, 4).

The minute species of this genus are still very insufficiently investigated.

Case membranous, compressed laterally; the larvæ live in still water.

Genus AGRAYLEA, Curtis.

Hydrorchestria, Kolenati.

Antennæ *not thickened; ocelli present;* last joint of the labial palpi large, thick, *conical;* wings narrow, lanceolate; spurs 0, 3, 4.

(?) Case membranous, gelatinous, slender, quadrangular, flat; for the pupa it is fastened to the lower surface of aquatic plants by four finger-like knobs in the four corners (Bremi).

51. AGRAYLEA MULTIPUNCTATA, Curt. Phil. Mag. 217; Steph. Ill. 153, 2; *A. sexpunctata*, Curt.; Steph.

Ochreous; antennæ brownish; anterior wings brown, densely clothed with hair, spotted with yellow; posterior wings grey, with long fringes; legs testaceous; tibiæ hairy.

Length $1\frac{3}{4}$ lin.; exp. 3 lin.

Hab. England.

I cannot separate the two species described by Curtis.

Genus HYDROPTILA, Dalman; Stephens.

Antennæ *thickened before the apex;* ocelli wanting; last joint of the labial palpi large, thick, *cylindrical;* wings extremely narrow, produced into a long, fine point, clothed with very long hairs; in the male I find 0, 3, 4 spurs, in the female 0, 2, 4.

Case membranous, flat, roundish, of the form of a cucumber seed.

The minute species belonging here have a most deceptive resemblance to the *Micro-Lepidoptera;* but they are separated therefrom without any difficulty by the total want of a scaly covering. The species much require a careful

study. In Stephens's Collection there are only three, namely, *H. tineoïdes*, *brunneicornis* and *sparsa*. The two former appear to me to be identical and to belong to *H. pulchricornis*, Pict.; the third, *H. sparsa*, I regarded as *tineoïdes*, Dalm.; whether the latter is not merely the female of the former remains still to be decided. In Curtis's Collection I saw *H. sparsa*, *Vectis* and *costalis*. The two former are identical, but not with Stephens's species; of the *H. costalis* the type was not in sufficiently good condition to allow me to come to a decided opinion.

52. HYDROPTILA PULCHRICORNIS, Pict.; *H. tineoïdes* and *H. brunneicornis*, Steph. Ill. 152, 1 and 2.
Testaceous, clothed with long hairs; antennæ brown before the apex and in the middle; wings brownish-grey, with very long fringes; anterior wings spotted with white.
Length 1½ lin.; exp. 2¼ lin.
Hab. London, Hertford, from June to August; common.

53. H. TINEOÏDES, Dalm.; *H. sparsa*, Steph. Ill. 152, 3.
Testaceous, clothed with long hairs; antennæ uniformly testaceous; wings ashy grey, with very long fringes; the anterior wings spotted with white.
Length 1½ lin.; exp. 2¼ lin.
Hab. Hertford, June; perhaps only the female of the preceding species.

54. H. VECTIS, Curt. Phil. Mag. 217; Steph. Ill. 152, 4; *H. sparsa*, Curt. Phil. Mag. 217.
Testaceous, clothed with long hairs; antennæ brown before the apex and in the middle; anterior wings

brown, brightly spotted with black and white, clothed with very long hairs.

Length $1\frac{1}{2}$ lin.; exp. $2\frac{1}{2}$ lin.

Hab. Hertford and South of England, in June.

55. H. COSTALIS, Curt. Phil. Mag. 218; Steph. Ill. 153, 5.

"Pale ochreous, shining; anterior wings variegated, fuscous, with a dot on the disc; the costal cilia long and black, with a long pale space at the centre" (Curtis).

Length 1—$1\frac{1}{3}$ lin.; exp. 3 lin.

Hab. London, June; probably also in Scotland.

Stephens's genus NARYCIA belongs to the *Micro-Lepidoptera;* the only species, *N. elegans*, is his *Xysmatodoma* (*Tinea*) *melanella*, to which *X. atrella* also belongs.

Acentropus niveus, *A. Garnonsii*, Curt. B. E. 497, the *Zancle Hansoni*, Steph., also belongs to the *Micro-Lepidoptera*, and, according to Zeller, to the *Crambidæ*.

[*To be continued.*]

HYMENOPTERA.

Notes on the Capture of Rare Species in 1858, with some Observations on their Economy, &c.

By Frederick Smith.

Being again requested to contribute our annual record of captures, observations and discoveries, it occurs to us that the Annual of the Entomologist is, to the best of our knowledge, the last of a once numerous and flourishing race. We well remember the publication of the first Annual, its novelty, its great success, and consequently the host of competing Souvenirs which soon appeared, dividing public favour; one appealed to the artistic taste, another to the taste poetic, there were also others of a graver character, whilst poor Tom's annual volume of cheerful and innocent mirth, brought joy and gladness to many a winter's hearth and home; all these have passed away, and the Entomologist's Annual is the last of the race. It is true that it bears little resemblance to its predecessors, its size and annual appearance being the only characters which unite it to the *genre*.

The Annual makes its fifth appearance, increasing in health and vigour with each succeeding year, and showing every promise of living many years to come; but whilst penning these observations we must not forget the scientific character of the work, which precludes on our part any

approach to jocularity; we must not forget certain hints which have reached us of our having transgressed in this particular on former occasions; but an Annual does appear to us to give a certain degree of licence, and if a quiet smile or so should escape from us we plead in excuse that it is our annual appearance, and we beg our readers to feel assured that the fault is not ours: if this little work, instead of an Annual, had been called a Register, not a spark of hilarity had escaped from us.

It will be seen that we have this season, as has indeed been the case on former occasions, to depend principally on our own resources, so few are our fellow-labourers, and our own opportunities of out-door research so limited, that the record of novelties must of necessity be brief.

A few months ago we perused a most desponding article on the "decline and fall" of Hymenopterology; we have better heart on this subject, and can assure the writer of the episode that some young and studious hands are at work. To the study of the *Hymenoptera* a large amount of patient application is required, there is no branch of Entomology indeed which can be thoroughly studied without, but that of the *Hymenoptera* is beset with many difficulties from which the student of other orders is comparatively free; one great difficulty in the discrimination of the species arises from their liability to a total change of appearance from exposure, many of the bees are extremely difficult to recognise when bleached and faded in the sun, in fact they frequently bear little resemblance to the beautiful insect which first flitted from flower to flower before us.

The *Tenthredinidæ* and *Ichneumonidæ* both await their monographer; a work on the *Formicidæ*, *Fossores* and *Vespidæ* will shortly appear.

The astonishing increase in the number of individuals who collect insects must eventually, we trustfully hope, include a far greater number who study them, and we look forward confidently to the day when the now neglected orders will have numerous votaries, earnestly and successfully investigating them; a deep and never failing interest attaches to all, but those whose inclinations or occupations only suffer them to look upon the most beautiful of the Insect-World, almost of necessity attach themselves to the *Lepidoptera;* this order has its students, and ardent ones too, but its admirers out-number those attached to all the other orders united. From this amazing increase of collectors, however, many benefits to science arise; the working dealer is sent into remote and unexplored localities, and thus objects new to our Fauna are frequently brought to light. This is consolatory, but we cannot hide from ourselves the fact, that too many exclusively devote their energies to the acquisition of specimens, which once obtained, all their ends and aims are accomplished. Others, possessing rich and valuable collections, earnestly and patiently investigate their treasures, studiously they work out the names of recorded species, and satisfactorily they ascertain which are new to science, but at this point they halt, and no result of their labours falls to the lot of the Entomological public—don't "they manage these things better in France?"

During the past season we have had an opportunity of investigating a portion of the Suffolk coast, at and in the neighbourhood of Lowestoft; this may be appropriately called a sandy region, pre-eminently promising of fossorial *Hymenoptera;* the results of our short campaign will show that we were not wrong in selecting this spot for the purpose of collecting that family.

By changing the field of operations each succeeding year, some hitherto rare or perhaps doubtful species occurs in abundance; we would, however, call particular attention to a capture made during the past season, on ground over which we have collected during the last two-and-twenty years. Shuckard, in his admirable Essay on the *Fossorial Hymenoptera*, says, in the remarks on *Pompilus notatus*, "I am unacquainted with the female of this insect, I took a single specimen in 1833 at Highgate; Mr. Stephens's, I believe, was captured at Ripley in Surrey." Since the year 1836 we have searched annually for that insect without success, but during the past season, at a spot which had been frequently searched before, we found the long looked for *P. notatus*, and captured seven males and one female; therefore let not those, whose occupations will not admit of their extending their researches beyond a limited district, despair of adding novelties to their collections, let them not imagine that in a few seasons they have exhausted any locality. In addition to the above another rarity, *Pompilus variegatus*, was captured within half-a-mile of the spot where the above novelty occurred; the latter we had not met with since the far-famed Colney Hatch Wood was destroyed, and an asylum for lunatics erected in its stead.

About twenty years ago we noticed, in the collection of the late J. F. Stephens, a very beautiful Ichneumon, *Arotes albicinctus*, taken on the trunk of an oak at the entrance to Darenth Wood; on obtaining the knowledge of the locality, we proceeded a few days afterwards to Darenth; no sooner had we arrived at the spot pointed out, than on the identical oak a fine *Arotes* settled before us, and was immediately captured; the following season a second example was taken at Colney Hateh, since which we have not met

with it until the present season, when a third was captured near Lowestoft.

Myrmosa melanocephala. Taken, not uncommon, at Lowestoft.

Tiphia femorata. In immense profusion at Pakefield, near Lowestoft, also taken near Exeter by Mr. Parfitt.

Pompilus rufipes. Taken abundantly at Pakefield.

Pompilus plumbeus. We mention this species, which is so generally distributed on our coasts, for the purpose of recording its appearance in numbers far greater than we ever observed any species of fossorial insect; this was at Pakefield, thousands upon thousands were seen on the sandy slopes, running on the leaves of plants and assembling on the heads of the Wild-carrot (*Daucus carrota*).

Pompilus pectinipes, found about three miles south of Lowestoft, on the coast.

Aporus unicolor. This rare insect was captured in Pakefield Gap: it is the fourth example which at present exists in British Collections; one in the collection at the British Museum, formerly in that of the late J. F. Stephens, two which I captured at Southend, and the above taken this season, in my own.

Ceropales maculata. Very plentiful to the south of Lowestoft, settling on the Wild-carrot; we have never been successful in tracing the history of this supposed parasite.

Ammophila lutaria. Not at all scarce on Corton Heath, to the north of Lowestoft, in company with the two other species of the genus.

Astata boops. Very abundant on Corton Heath at the verge of the ravine. Mr. Parfitt has taken it near Exeter.

Gorytes Fargeii. This very local species was taken about five miles south of Lowestoft, near Kessingland.

Harpactus tumidus. This scarce species was taken in Pakefield Gap.

Mellinus sabulosus. Shuckard says of this insect, "all the specimens I have seen have come from Norfolk or Suffolk, where it appears to be local;" Mr. Hewitson took it, I believe, near Newcastle; Dr. Howitt found it at Nottingham, and Mr. Dossetor captured it at Christ Church Sands, Hampshire: at none of these localities does it appear to have occurred in any numbers; to the south of Pakefield it occurs in the greatest profusion—here, for the first time, we had the pleasure of seeing this pretty species alive.

Crabro scutatus. We had not taken this insect for several years; in 1836 we took two males and one female at Birch Wood, Kent, and have always considered it one of the rarest species of the genus to which it belongs. Near Pakefield it occurred in the greatest abundance; they are very fond of settling on the leaves of plants, particularly those of the Coltsfoot, and sunning themselves; the females burrow in hard sandy banks, and provision their nests with a species of *Culex.*

Cerceris interrupta. This rare insect was the only species of *Cerceris* which we captured near Lowestoft.

This record of captures of fossorial *Hymenoptera* will, no doubt, induce others to visit Lowestoft, certainly the best locality for that family of insects which we ever discovered; insects of rarity only are enumerated, but a long list of more generally distributed species were equally numerous. We may mention *Crabro dimidiatus* on account of its extreme abundance; we took two or three examples of the rare black variety of the male.

The captures of bees, during the past season, have not been by any means so numerous as in 1857, a season remarkable for the acquisition of several of our rarest species; but

to us the capture of a British bee for the first time is a remarkable event; last year we had that gratification, and this season, for the first time, we took a male of the rare *Prosopis dilatatus;* and, better still, have obtained a perforated stick, containing, we have little doubt, a series of seven cells of that bee, enclosing the larvæ; the cells are lined with the same kind of transparent membrane as those constructed by the species of the genus *Collotes,* but with this difference, there is no space left between the cells, they are separated simply by a division of thin membrane; we hope next year to be able to describe the female of this rare species, which is at present unknown.

Andrena decorata. This rare bee was captured by Mr. Parfitt, in Devonshire.

Andrena nigriceps. Three or four examples of the female were taken on the flowers of the Rag-wort, to the south of Lowestoft.

Andrena Coitana. Taken at the same spot as the preceding, in company with *A. Shawella,* Kirby; thus confirming the correctness of uniting Kirby's species. We have now taken them in company in Yorkshire, at Kingsdowne near Deal, and at Lowestoft.

Cilissa tricincta and *Panurgus Banksianus,* both occur near Lowestoft.

Nomada armata. This rare species was taken by Mr. Parfitt, near Exeter, on ground where the following species also occurs; it may prove to be its parasite.

Osmia xanthomelana. A fine series of this very local bee were taken in the spring by a working collector, J. Truscott of Exeter, of whom we obtained some very fine examples. Mr. Parfitt also took the species in the same locality near Exeter.

Megachile maritima. Very abundant on Corton Heath, north of Lowestoft, and also *Cœlioxys quadridentata*, *C. rufescens*, *C. umbrina* and *C. simplex*.

Ceratina cærulea. Taken at Folkestone, on the *Echium vulgare*, by Mr. S. Stevens, in June.

Bombus Smithianus. Taken by Mr. Henry Squire, in Shetland.

Bombus nivalis. From the same locality, by Mr. Squire.

The occurrence of hermaphrodites amongst the Aculeate *Hymenoptera* is of such rare occurrence, or has been so seldom observed, that the capture of a third example, and that in a genus in which it has not, to my knowledge, been previously observed, is worthy of a special notice. Mr. James Stokes captured an hermaphrodite of *Andrena nitida*, and I am indebted to him for the liberal presentation of the specimen to my collection. The right side is male, the mandible being slender and arcuate, the antenna thirteen-jointed, and the side of the face with long white pubescence; the thorax exhibits scarcely any perceptible difference on the upper side, but beneath the difference is very striking, the female side being much swollen, whilst the male side is very much less convex; it is in the legs that the most marked difference is seen, the basal joint of the tarsi of the anterior and intermediate pair are stout, and densely pubescent beneath on the female side, whilst on the male side they are slender, and have only scattered hairs; the posterior legs are, however, the most anomalous: on the female side the trochanter has a long floccus of white hair, the femur has a fringe of a similar colour, and the tibia is densely clothed with short hair, which is dark brown above and silvery beneath; the male leg has none of these appliances, but is very slender, elongate and slightly pubescent; the abdomen has

the rounded form on the female side, with two patches of white pubescence above, the male side being much less rounded, or lanceolate; this would belong to the division of perfect hermaphrodites, according to Burmeister, that is, the external form is perfect male on one side and female on the other.

The above is the fourth instance which has come to my knowledge of hermaphroditism in the Aculeate *Hymenoptera;* the first being the remarkable example figured in my Monograph of the British Bees, and also in the third volume of the Zoologist; Mr. Walcott has also an hermaphrodite of the same bee, *Anthophora acervorum.* The third specimen is of a species of *Nomada, N. Baccata,* and the fourth the *Andrena* figured on the frontispiece of this volume (Fig. 7).

As the foregoing list will probably induce others to visit Lowestoft, the pleasure of their capture will be much enhanced by the knowledge that they are exploring ground which the greatest English Hymenopterist traversed in the year 1806. In the life of the Rev. William Kirby it is related, in a letter to Mr. Spence, "between walking and riding I managed to get as far as Lowestoft, from whence at the end of the first week I started." I felt assured from this that the very ground I was hunting over had been previously visited by Kirby, and this conviction, I need scarcely add, not only rendered the spot doubly interesting, but imparted an additional pleasure to my successful investigations.

NOTE.—*The captures at Lowestoft and in its neighbourhood were made during the two last weeks of July and the two first of August.*

COLEOPTERA.

New British Species noticed in 1858.

By E. W. Janson, Sec. Ent. Soc.

In the following enumeration of the species recorded as new to our list during the year, it is not improbable that some may ultimately prove to be described in the works of the late Mr. Stephens, and to be extant in his Collection; while, on the other hand, I may have inadvertently excluded some which are in reality entitled to a place here, being neither represented in his Collection nor described in his works. I allude more particularly to the *Brachelytra*, in which group, it will be remarked in the following pages, the accession of new species, derived from the "Catalogue of British Coleoptera," of which the first instalment was published by Mr. Waterhouse in the early spring, is this year again somewhat formidable.

The facilities *exclusively* possessed by Mr. Waterhouse of leisurely and thoroughly investigating the Collection of the late Mr. Stephens, purchased by the nation and now deposited in the British Museum, warranted the expectation that on this score at least his catalogue would have afforded

a complete epitome; and that, taking Mr. Wollaston's "Revision of the British Atomariæ"* as his model, he would have furnished such an analysis of the insects placed by Mr. Stephens in his cabinet to represent his published descriptions as should guide us in forming a correct estimate of the value of those descriptions, and of arriving at a fair and impartial decision as to the extent to which the names employed by Mr. Stephens will *rightfully* supersede those in use on the Continent.

Until such an analysis is laid before the Entomological public, any attempt to establish an uniform nomenclature must prove utterly abortive. It is not to be supposed that the Entomologists of the Continent will consent to the banishment of names "familiar to them as household words," and embalmed in the laborious and conscientious works of Gyllenhal, Erichson, Aubé, Schioedte, Schaum, Mannerheim, Chevrolat, Heer, Kraatz, Fairmaire, and a host of worthies too numerous to mention, unless full and unquestionable evidence is adduced of our *right* to substitute for them names equally cherished by us—precious legacies bequeathed to us in the writings of Kirby, Spence, Marsham, Leach, Stephens, Curtis, Westwood, Denny, Haliday, Wollaston, Walton, and luminaries of minor magnitude.

In Mr. Waterhouse's catalogue the Stephensian synonyms are based upon the examination of a *single individual* only of each species, *selected by him* from the series, however extensive, and *arbitrarily* taken as the *type*, without any reference whatever to the *remaining specimens*, of which *no account* at all is vouchsafed. And as it not unfrequently happens that two, or, in difficult genera, more, species are

* Trans. Ent. Soc. Lond. New Series, iv. 64 (1857).

mixed up in Mr. Stephens's cabinet under the same specific title, it results, that Mr. Waterhouse's catalogue conveys a very imperfect notion of Mr. Stephens's views and of the species contained in his Collection. The fact that a species is unaccompanied by any reference whatsoever to Stephens does not, as one would surmise, necessarily imply either that it was not known to and described by Mr. Stephens or that it is not to be found in his Collection, *e. g. Achenium depressum*, which is well described by Stephens, Illustr., Mand. V., 265, 1, excluding the last paragraph of the description, which refers to *A. humile*, which he considered to be a variety, and with which it will be found mixed up in his cabinet. Again, in the genus *Oligota*, Mr. Waterhouse enumerates *four* species, to none of which does he make the remotest allusion either to the Stephensian works or Collection, and which would naturally induce the belief that the genus was totally unknown to Mr. Stephens and unrepresented in his Collection, an inference scarcely reconcilable with the fact that in the Manual he *describes no fewer than six species under that genus, to not one of which is prefixed the sign that he did not possess it, and of all of which exponents exist, therefore, in his Collection.*

Under these circumstances it is obvious that in my summary of the new species of *Brachelytra* noticed in 1858, faults both of commission and omission are not unlikely to occur.

Furthermore, I have been under the necessity of passing over two Lists published by Mr. Waterhouse, Proc. Ent. Soc. Lond. 7 Dec. 1857, 96, of the genera *Rhizophagus* and

Monotoma, no authors' names being appended to the species nor any reference given to Stephens.

1. NOTIOPHILUS SUBSTRIATUS, Waterhouse, Cat. Brit. Col. 4 (1858).

   Notiophilus substriatus, Waterhouse, Ent. Mag. i. 211, 17 (1833).

   Notiophilus punctulatus, Wesmael, Bullet. de l'Acad. de Bruxell. ii. 22 (1835); Fairm. et Laboulb. Faune Ent. Franç. i. 9, 3 (1854); Schaum, Naturg. d. Ins. Deutschl. i. 65, 4 (1856).

   Notiophilus semipunctatus, var. γ, Dawson, Geod. Brit. 55, 4 (1854), excluding *N. nitidus* and *biguttatus*, Waterhouse, which, judging from the original descriptions, cannot be synonymous with the insect now under consideration.

Distinguished from *N. biguttatus*, F. (*semipunctatus*, F., Dawson, but with regard to which it is perhaps most advisable to adopt the course pursued by Dr. Schaum and followed by Mr. Waterhouse, and to reinstate the specific title *biguttatus*, F., since the description thereunto appended suits the ordinary phase of the species, whilst that given under *semipunctatus* applies to a form of comparatively rare occurrence) by the parallel frontal sulci, the fine striæ on the posterior part of the head immediately behind the eyes; by the longer, narrower, and more parallel elytra; by the interstices between the suture and the first, and between the second and seventh striæ, being exceedingly finely chagrined, imparting an opaqueness to those parts, which contrasts strongly with the broad glabrous space between the first and second striæ; moreover in *semistriatus* the spaces between

the second and third and the third and fourth striæ are distinctly wider than those comprised between the striæ beyond them; the sculpture throughout is much finer, and the colour invariably more brassy, than in *biguttatus*.

On referring to M. Wesmael's description, *l. c.*, and comparing it with that of Mr. Waterhouse above cited, I find that the diagnostics (the fine sculpture and the inequality of the spaces between the dorsal striæ of the elytra) are the same in both; there is therefore no plea for adopting the name proposed by M. Wesmael in preference to that imposed by Mr. Waterhouse, and which is two years anterior in date of publication.

It is much to be regretted that Mr. Waterhouse, in his recently published Catalogue, has not given us a full resumé of the synonymy of the British *Notiophili;* a statement at his own hands of the views he now entertains would have set the matter at rest for ever, whereas the fact that he does *not* coincide in the conclusions arrived at in respect to them by Mr. Dawson, and that he cites *four* only of the *eighteen* species given in his "*Monographia Notiophilon Angliæ*" as synonymous with the recognized British species, admits of the inference that he considers the remaining *fourteen* distinct.

N. substriatus appears to be very generally distributed throughout the southern portion of our island; I have met with it in single specimens at various points of the London district, more frequently in the vicinity of Croydon than elsewhere.

2. Harpalus servus, Dufts.; E. W. Janson, Proc. Ent. Soc. 5 April, 1858, Zool. 6072 (1858).

Carabus servus, Dufts. Faun. Austr. ii. 101, 97 (1812).

Harpalus servus, Gyll. Ins. Suec. iv. 437 (1827);

Dej. Spec. gen. iv. 377, 151 (1829), Icon. iv. 229, 108, tab. 197, f. 3 (1834); Erich. Kaef. d. Mark Brand. i. 56, 21 (1837); Redtenb. Faun. Aust. 101, 32 (1849), 2nd ed. 60, 35 (1857); Fairm. et Laboulb. Faune Ent. Franç. i. 138, 61 (1854).

Harpalus complanatus, Sturm, Deutsch. Faun. Ins. iv. 64, 36, Tab. 88, f. *a A* (1818).

Harpalus coracinus, Steph. Illustr. Mand. i. 145, 12 (1828), Man. Brit. Col. 41, 299 (1839), *nec* Sturm.

Harpalus maritimus (Kirby), Steph. *l. c.*, and of the Kirbyan and Leachian Cabinets.

Harpalus anxius, *var.*, immature, Dawson, Geod. Brit. 151, 28 (1854)?

Distinguished from its near ally *H. anxius*, and which it should precede in our collections, by its invariably larger size and broad depressed form, bright ferruginous antennæ, the greater comparative width of the thorax behind, which gives it the appearance of being much more narrowed in front, its more acute posterior angles, and by its relatively short broad elytra. In colour it varies from pitchy black to bright red-brown; in the darkest specimens the lateral and posterior margins of the thorax are narrowly red-brown, in lighter coloured individuals the posterior angles are broadly red; the extremities appear not to vary in hue.

Detected by Mr. H. Squire among a number of unset and unexamined *Coleoptera* collected by Mr. F. Smith near Deal in the autumn of last year, in which locality he has subsequently taken it very sparingly in March and July.

Fig. 6.

3. ANISOTOMA BRUNNEA, Sturm; Waterhouse, Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858).

I may here remark that *Anisotoma obesa*, Schmidt, given

by Mr. Waterhouse, Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858), as a distinct species, has been satisfactorily shown by Dr. Kraatz, Ent. Zeit. Stettin, xiii. 379 (1852), to be synonymous with *A. brunnea*, Sturm: in this view Dr. Schaum concurs; *conf.* Cat. Col. Eur. 4th ed. (1852).

4. Anisotoma ciliaris, Schmidt; Waterhouse, Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858).
5. Cyrtusa minuta, Ahrens; Waterhouse, Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858).
6. Agaricophagus cephalotes, Schmidt; Waterhouse, Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858).
7. Leiodes orbicularis, Herbst; Waterhouse, Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858).
8. Eutheia plicata, Gyll.; Waterhouse, Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858).

Taken by Mr. Pelerin, from whom I obtained a specimen, identified by me at the time, upwards of four years since; found by Mr. Whittingham at Leytonstone and by Mr. Waterhouse at the Crystal Palace. Mr. Wollaston met with it at Whittlesea in September last, and kindly presented me with a pair.

9. Bolitochara lunulata, Payk. (*nec* Steph.); Waterhouse, Cat. Brit. Col. 15 (1858).
10. Calodera riparia, Erich.; Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6073 (1858).

A single specimen taken by Dr. Power in the autumn of 1857 at Holme Bush, near Brighton.

11. Ischnopoda rubicunda, Erich.; Waterhouse, Cat. Brit. Col. 17 (1858).
12. Homalota imbecilla, Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6074 (1858) (described).

Taken by Mr. Waterhouse under *rejectamenta* at the mouth of the Orwell, in September, 1855.

13. HOMALOTA PLUMBEA, Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6074 (1858) (described).

Found by Dr. Power at Seaford, near Newhaven; by Mr. H. Squire at Brighton; and by Mr. F. Bond in the Isle of Wight—beneath seaweed on the beach.

14. HOMALOTA ÆGRA, Heer; Waterhouse, Cat. Brit. Col. 18 (1858).

Homalota luctuosa, Mulsant, Opusc. Ent. ii. 35, 1 (1853), appears to differ but little from this, and will probably sink as a synonyme; *conf.* Kraatz, Naturg. d. Ins. Deutschl. ii. 249, 52 (1858).

15. HOMALOTA MARCIDA, Eric.; Waterhouse, Cat. Brit. Col. 19 (1858).

I have taken this in moss near Highgate.

16. HOMALOTA ORBATA, Eric.; Waterhouse, Cat. Brit. Col. 19 (1858); Proc. Ent. Soc. 3 May, 1858, Zool. 6115 (1858).

Found by Dr. Power at Merton; taken also by Mr. Constantine in Lancashire.

17. HOMALOTA PULCHRA, Kraatz; Waterhouse, Cat. Brit. Col. 19 (1858).

Taken by Dr. Power in a marsh near Red Hill early in May, 1856, and again in the same month on the banks of the Thames near Charlton.

18. OCYUSA RUFICORNIS, Kraatz; E. W. Janson, Proc. Ent. Soc. 5 April, 1858, Zool. 6072 (1858).

Oxypoda fulvicornis, Fairm. et Laboulb.

Found in the early spring amongst dead rushes at the sides of a ditch within the London district; apparently so local and scarce that to publish the precise locality in which it

occurs would, beyond a doubt, ensure its speedy and utter extirpation.

19. Oxypoda rufula, Mulsant; Waterhouse, Cat. Brit. Col. 17 (1858).

Of this elegant little species I have met with a single specimen only; it was taken near Hampstead, on the underside of a piece of decayed wood which I had laid on the declivity of a large nest of *Formica rufa* as a trap for myrmecophilous insects.

20. Oxypoda nigrina, Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6073 (1858) (described).

Taken at Erith in July, 1855, at Charlton in June, 1855, and in other places near London; found by Mr. M. Young near Paisley, and by Dr. Power at Kilburn, Darenth and Cowley.

21. Oxypoda nigrofusca, Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6073 (1858) (described).

Hampstead.

22. Oxypoda? aterrima, Waterhouse, Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858) (described).

Taken by Mr. M. Young near Paisley.

23. Aleochara bisignata, Eric.; Waterhouse, Cat. Brit. Col. 16 (1858).

24. Oligota granaria, Eric.; Waterhouse, Cat. Brit. Col. 19 (1858); Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858).

Oligota granaria, Eric. Kaef. d. Mark Brand. i. 364, 4 (1837).

Oligota casei, Steph. Man. Brit. Col. 366, 2868 (1839)? Stephens's description of *Al. pumila*, Illustr. Mand. v. 131, 67 (1832), cannot possibly refer to this insect, which is known to me by description only.

Taken by Dr. Power at the Holt, Hampshire.

25. OLIGOTA FLAVICORNIS, Lacord.; Waterhouse, Cat. Brit. Col. 19 (1858).

Mr. Waterhouse has referred this species to Erichson; it was, however, long previously described under the name of *Hypocyptus flavicornis* in Boisduval and Lacordaire's Faune Ent. des Envir. de Paris, i. 521, 4 (1835), as cited both by Erichson and Kraatz.

Nearly allied to the preceding species, resembling it in form and the pale colour of the antennæ, but in the present insect these organs have the club consisting of *three* joints only, while in *O. granaria* it is *quadri*-articulate. I found a pair of this insect beneath dead leaves at the roots of trees at Wanstead, Essex, on the 21st October, 1851; it was taken in some numbers by beating lime trees, at Kennington, in July, 1857.

26. GYROPHÆNA GENTILIS, Eric.; Waterhouse, Cat. Brit. Col. 19 (1858).

I have met with this species in fungi near Hampstead in July; it is apparently very rare.

27. GYROPHÆNA STRICTULA, Eric.; Waterhouse, Cat. Brit. Col. 19 (1858).

28. AGARICOCHARA LÆVICOLLIS, Kraatz; Waterhouse, Cat. Brit. Col. 19 (1858); Proc. Ent. Soc. 3 May, 1858, Zool. 6115 (1858).

Taken by Dr. Power at the Holt, Hampshire. I have met with it in boleti at Colney Hatch.

29. PLACUSA PUMILIO, Grav.; Waterhouse, Cat. Brit. Col. 19 (1858).

Found by Mr. M. Young, near Paisley.

30. EURYUSA LATICOLLIS, Heer; Waterhouse, Cat. Brit. Col. 15 (1858).

First taken by me beneath bark of Elm trees near High-

gate, and subsequently found by Mr. Waterhouse at Henhault Forest.

I am by no means satisfied that this is the insect to which Heer applied the name of *laticollis*. My specimens were taken on three occasions, and were certainly not accompanied by any ant, nor was an ant of any description to be seen in the vicinity.

31. Hypocyptus pulicarius, Eric.; Waterhouse, Cat. Brit. Col. 20 (1858).

32. Hypocyptus pygmæus, Kraatz (?); Waterhouse, Cat. Brit. Col. 20 (1858).

33. Conurus bipunctatus, Eric.; Waterhouse, Cat. Brit. Col. 21 (1858).

34. Tachyporus tersus, Eric.; Waterhouse, Cat. Brit. Col. 21 (1858).

Appears more partial to swampy places than most of its congeners, and to be rare. I have taken it near Croydon and at Hammersmith marshes early in the Spring.

35. Tachyporus transversalis, Grav.; Waterhouse, Cat. Brit. Col. 21 (1858).

Hampstead and near Finchley, rare.

36. Lamprinus saginatus, Grav.; Waterhouse, Cat. Brit. Col. 21 (1858).

Given me by Mr. E. Sheppard, of Notting Hill, by whom it was captured in that neighbourhood. A specimen was taken about two years back by Mr. Edwin Shepherd, near Wickham, Surrey.

37. Tachinus rufipennis, Gyll.; Waterhouse, Cat. Brit. Col. 20 (1858).

A single example found by Mr. Wollaston in North Wales.

38. TACHINUS BIPUSTULATUS, Grav.; Waterhouse, Cat. Brit. Col. 20 (1858).

A rare species which I have on several occasions met with near Highgate, Hampstead and Charlton, Kent, amongst the fermenting comminuted wood ejected from their burrows by the larvæ of *Cossus ligniperda:* my colleague, Mr. Edwin Shepherd, has found it under similar circumstances near Putney.

39. MYCETOPORUS LUCIDUS, Eric.; Waterhouse, Cat. Brit. Col. 22 (1858).

This insect occurs in moss in humid places. The only specimen I possess was taken by Mr. G. Guyon, near Ventnor, in the Isle of Wight; and in Mr. Wollaston's Collection, I find a single individual captured by that gentleman near Norwich.

40. MYCETOPORUS PUNCTUS, Grav., Eric., Kraatz.
Mycetoporus punctatus, Waterhouse, Cat. Brit. Col. 22 (1858).

41. XANTHOLINUS LONGIVENTRIS, Heer; Waterhouse, Cat. Brit. Col. 26 (1858).

A not uncommon insect in the vicinity of London. Nearly allied to *X. linearis*, and confounded with it by the older Entomologists; it may be readily distinguished by its usually larger size, by the linear series of punctures on each side of the thorax, rarely exceeding twelve in number, being larger and deeper, by its brassy black elytra and their more delicate and sparser puncturing.

42. PHILONTHUS LUCENS, Mannerh.; Waterhouse, Cat. Brit. Col. 24 (1858).

In cow-dung near Hampstead, rare.

43. PHILONTHUS LEPIDUS, Grav.; Waterhouse, Cat. Brit. Col. 24 (1858).

In a letter, dated 30th September, 1848, Mr. J. Hardy writes me that he had received a specimen of this insect from Deal, and that Stephens's description of *Quedius lepidulus* (Kirby) appears to refer to it.

Dr. Power has met with it in the above-mentioned locality; and there are several specimens in Mr. Wollaston's Collection taken at the same place by that gentleman. I am not aware that it has occurred elsewhere in Britain.

44. Philonthus splendidulus, Grav.; Waterhouse, Cat. Brit. Col. 25 (1858).

This curious insect is apparently rare; it is to be sought for on the muddy margins of ponds and streams: I first met with it near Kingsbury on the 11th of September, 1848.

45. Philonthus thermarum, Aubé; Waterhouse, Cat. Brit. Col. 25 (1858).

Philonthus exilis, Kraatz *clim.*

Frequents manure heaps and hot-beds. I have met with it near Croydon, and Mr. Squire secured two or three specimens near Hampstead in July last.

46. Philonthus fumarius, Grav.; Waterhouse, Cat. Brit. Col. 25 (1858).

The first specimens which came under my notice I obtained at the sale of the collections of the late Mr. Hemmings, of Brighton, where he probably captured them. Dr. Power has met with it in the same locality; and Mr. Squire found it there sparingly in December last.

47. Philonthus nigrita, Nordm.; Waterhouse, Cat. Brit. Col. 25 (1858).

Taken by Dr. Power at Eltham, Kent, in January last.

48. Philonthus pullus, Nordm.; Waterhouse, Cat. Brit. Col. 25 (1858).

Discovered by Dr. Power at Portsea in August, 1857.

49. PHILONTHUS CINERASCENS, Grav.; Waterhouse, Cat. Brit. Col. 26 (1858).

An abundant species near London, occurring on the margins of ponds and ditches; I have met with it in profusion at Hammersmith marshes and similar localities.

I have great hesitation in including this in the list of new species, but it appears from Mr. Waterhouse's Catalogue to have been unknown to Stephens, who erroneously applied the name to *Phil. procerulus*, Grav.

50. PHILONTHUS SIGNATICORNIS, Mulsant et Rey; Waterhouse, Cat. Brit. Col. 26 (1858); Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858).

Taken by Dr. Power at Eastcot, Merton and Barnes. I have met with it at Hammersmith and Southend.

51. HETEROTHOPS DISSIMILIS, Grav.; Waterhouse, Cat. Brit. Col. 22 (1858).

In haystack refuse near Finchley and Highgate; rare. Dr. Power has taken it near Waterford and in the neighbourhood of Brighton.

52. HETEROTHOPS QUADRIPUNCTULUS, Grav.; Waterhouse, Cat. Brit. Col. 22 (1858).

In decaying vegetables, and among haystack rubbish, near Croydon and Finchley; very rare. Dr. Power has met with it at Hammersmith and Darenth, Kent.

53. QUEDIUS XANTHOPUS, Eric.; Waterhouse, Cat. Brit. Col. 22 (1858).

54. QUEDIUS SCITUS, Grav. Waterhouse, Cat. Brit. Col. 23 (1858).

Mr. Waterhouse refers this species to Erichson; but that author cites *Staph. scitus*, Grav. Mon. Col. Micr. 50, 13 (1806), and Gyll. Ins. Suec. ii. 306, 22 (1810). Kraatz

quotes Gyllenhal, but omits all reference to Gravenhorst, to whom, however, the species has been universally attributed.

Kraatz considers *Quedius atriceps*, Steph., as the variety with the thorax and elytra destitute of black markings—"*rufo-testaceus capite solo piceo;*" it is, Mr. Waterhouse states, a variety of *Q. fulgidus*, F.

This insect is certainly partial to the society of *Formica fuliginosa;* but is, nevertheless, not a myrmecophilous species in the strict sense of the term. I have taken it with the ant, and beneath bark, far removed from any ant's nest; it appears to be a rare and exceedingly local species.

55. QUEDIUS LÆVIGATUS, Gyll.; Hardy in Murray's Catalogue of Scotch Coleoptera, 122 (1853); Waterhouse, Cat. Brit. Col. 23 (1858).

Apparently confined to the northernmost portions of our island; the first specimen which I had seen was sent me nearly ten years since by Mr. R. Hislop; it was subsequently brought up to London in some numbers by Mr. Foxcroft, by whom it was taken beneath the bark of firs at Rannoch, Perthshire.

I find that, through some unaccountable oversight, I neglected to include this species in my summary of new species in the Annual for 1855.

56. LATHROBIUM RUFIPENNE, Gyll.; E. W. Janson, Proc. Ent. Soc. 6 July, 1857; Waterhouse, Cat. Brit. Col. 26 (1858).

Mr. Stephens's descriptions, Illustr. Mand. v. 268, 6; Man. Brit. Col. 405, 3229, refer indubitably to this insect, being copied, the diagnosis verbatim, from Gyllenhal; but in his cabinet a male individual of the common *L. elongatum* has served to represent it: taken near Bristol by Mr. S. Barton; at Clapham, near London, by Mr. Waterhouse; near Graves-

end by myself; and, about a month since, by Mr. Squire at Horning, in Norfolk. It frequents turfy bogs, and appears to be everywhere scarce.

57. Lathrobium pallidum, Nordm.; Waterhouse, Cat. Brit. Col. 27 (1858).

I captured a single example of this insect amongst rubbish brought down during a flood, at Tottenham, Middlesex, on the 29th October, 1848.

58. Scopæus lævigatus, Gyll.; Waterhouse, Cat. Brit. Col. 27 (1858).

Discovered by Mr. Wollaston in North Wales.

59. Lithocharis brunnea, Eric.; Waterhouse, Cat. Brit. Col. 27 (1858).

The first specimen which came under my notice was found by Mr. G. Guyon at Ventnor, in the Isle of Wight, about six years back; I have since taken it near London; it appears to be rare.

60. Lithocaris apicalis, Kraatz; Waterhouse, Cat. Brit. Col. 27 (1858).

61. Stilicus subtilis, Eric.; Waterhouse, Cat. Brit. Col. 27 (1858).

I have taken this species near Croydon on several occasions in the spring, and secured a single example at Hurst, near Brighton, on the 7th October, 1857; it occurs in moss and among decaying vegetable matter, and appears partial to the chalk.

62. Stilicus similis, Eric.; Waterhouse, Cat. Brit. Col. 27 (1858).

63. Stilicus geniculatus, Eric.; Waterhouse, Cat. Brit. Col. 27 (1858).

Taken by Dr. Power near Uxbridge, and at Woking, and to his liberality I am indebted for a specimen.

Rugilus punctipennis, Steph., has, according to the published descriptions [Illustr. Mand. v. 278, 3 (1833), Man. Brit. Col. 408, 3252 (1839)], the "*elytra brassy black, spotless*," and can scarcely be referred to the present species, in which the *elytra* are *pitchy*, with the *apex testaceous*.

64. Pæderus caligatus, Eric.; Waterhouse, Cat. Brit. Col. 27 (1858).

Found by Mr. Waterhouse, near Alverstoke, Hants.

65. Stenus solutus, Eric.; Waterhouse, Cat. Brit. Col. 29 (1858), Proc. Ent. Soc. 3 May, 1858, Zool. 6116 (1858); E. Shepherd, Proc. Ent. Soc. 3 May, 1858, Zool. 6114 (1858).

Taken at Cowley, near Uxbridge, and at Lee, Kent, by Dr. Power, and within the London district by Mr. E. Shepherd and myself. Mr. Squire has likewise met with it at Whittlesea, and at Horning, Norfolk. Although widely distributed it appears to be very scarce.

66. Stenus picipennis, Eric.; E. W. Janson, Proc. Ent. Soc. 5 April, 1858, Zool. 6072 (1858); Waterhouse, Cat. Brit. Col. 28 (1858).

First identified as a distinct unrecorded British species by Mr. Edwin Shepherd, who captured it in the autumn of 1857, at which period he presented me with specimens and pointed out to me its characteristics. Found by Dr. Power in Hampshire, and by myself at Hampstead, Highgate and Southend.

67. Stenus rugosus, von Kiesenwetter; T. V. Wollaston, Zool. 5928 (1858).

Stenus Guynemeri, Jacq. Duval; Waterhouse, Cat. Brit. Col. 28 (1858).

"Caernavon, amongst wet earth and shingle at the edges of a small trickling stream, which finds its way into the

river which flows down from the Snowdon range through the Llanberis Pass. Extremely rare." *Wollaston, l. c.*

Mr. Edwin Shepherd has received it from Mr. M. Young, by whom it has been taken, in some numbers I believe, in the vicinity of Paisley.

68. Evæsthetus læviusculus, Mannerh.; Waterhouse, Cat. Brit. Col. 27 (1858).

Discovered by Mr. Wollaston at Holyhead.

69. Evæsthetus ruficapillus, Lacord.; Waterhouse, Cat. Brit. Col. 27 (1858).

Abundant at Hammersmith marshes in the early spring; found also, but I believe very sparingly, at Horning, Norfolk, by Mr. Squire.

70. Bledius pallipes, Grav.; Waterhouse, Cat. Brit. Col. 29 (1858).

71. Bledius femoralis, Gyll.; Waterhouse, Cat. Brit. Col. 29 (1858).

72. Platysthetus nodifrons, Sahlb.; Waterhouse, Cat. Brit. Col. 29 (1858).

Taken by Mr. Wollaston at Whittlesea.

73. Platysthetus capito, Heer; T. J. Bold, Zool. 5928 (1858) (described).

First taken, in May, 1856, by my colleague, Mr. Edwin Shepherd, near Croydon, and subsequently in the same locality by myself; I have likewise met with it near Reigate, and have recently seen a specimen in Dr. Power's Collection, secured by that gentlemen near Dover.

Not having had an opportunity of narrowly examining Mr. Bold's insect, I am unable to state anything positive with respect to it; but his description appears to me not to agree with the true *capito*, Heer, Kraatz; the conformation of the sixth and seventh abdominal segments given by

Mr. Bold being at variance with my insect and with Dr. Kraatz's description (Naturgesch. der Ins. Deutschl. ii. 844 (1858)).

74. Oxytelus piceus, L.; Grav.; Gyll.; Eric.; Waterhouse, Cat. Brit. Coll. 30 (1858).

Mr. Waterhouse cites the *Staph. piceus* of the Linnæan Collection as synonymous with the *O. sculptus*, Grav.; Eric. Dr. Erichson considered it identical with the insect described by Gyllenhal under the specific title of *piceus*, which was confirmed by Mr. Westwood, Proc. Ent. Soc. 5 Oct. 1840, p. 13, Ann. and Mag. Nat. Hist. vii. 149 (1840), Trans. Ent. Soc. Lond. iv. 54, 25 (1845), where he says, "I believe the *Oxyt. piceus* of the English collections is a distinct species." Now the *O. piceus* of the English collections is doubtless the insect so denominated by Stephens in *his* Collection (the fountain-head of Entomological information of that day, at all events as far as nomenclature was concerned), and which Mr. Waterhouse correctly assigns as a synonym to *O. sculptus*, Grav. I am willing to believe that the insect *now* standing in the Linnean Collection as *Staph. piceus*, L., coincides with *O. sculptus*, Grav.; but it is manifest that some transposition or substitution must have taken place during the eighteen years which have elapsed since Mr. Westwood critically examined it: moreover Linnæus, Syst. Nat. i. 686, 25, remarks of his *S. piceus*, "*Habitat Upsaliæ*," but the *O. sculptus* has not, I believe, to this day been detected in Sweden.

75. Ancyrophorus Omalinus, Eric.; Kraatz; Waterhouse, Cat. Brit. Col. 30 (1858).

Taken by Dr. Power near Sawley, Lancashire.

76. Trogophloeus foveolatus, Sahlb.; Eric.; Waterhouse, Cat. Brit. Col. 30 (1858).

77. THINOBIUS BRUNNEIPENNIS, Kraatz? Waterhouse, Cat. Brit. Col. 30 (1858).

Scotland. In the Rev. W. Little's Collection. *Mr. Waterhouse.*

78. ACROGNATHUS MANDIBULARIS, Gyll.; J. W. Douglas, Proc. Ent. Soc. 7 June, 1858, Zool. 6152 (1858).

"Taken at Darenth about three years ago."

79. ANTHOPHAGUS CARABOIDES, Grav., Eric. (*nec* Steph.); Waterhouse, Cat. Brit. Col. 30 (1858).

80. LESTEVA PUBESCENS, Mannerh., Eric.; Waterhouse, Cat. Brit. Col. 31 (1858).

Captured in North Wales by the Rev. H. Clark; near Paisley by Mr. M. Young; and in the Isle of Wight by Mr. F. Bates, to whom I have much pleasure in acknowledging myself indebted for a beautiful specimen.

81. OMALIUM MONILICORNE, Gyll.; Waterhouse, Cat. Brit. Col. 31 (1858).

Stephens's description of *S. monilicorne*, Illust. Mand. v. 347, 5 (1834); Man. Brit. Col. 428, 3419 (1839), appears to have been compiled from Gyllenhal, Ins. Suec. ii. 219, 18 (1810), his diagnosis being copied verbatim, save that in lieu of "*elytris longioribus fuscis, confertissime punctulatis*," he has simply "*elytris piceis.*" In his collection, however, he has placed a specimen of *O. concinnum*, Marsham, to represent it.

Taken by Mr. Foxcroft at Rannoch, Perthshire, in the summer of 1855.

82. OMALIUM PLANUM, Payk.; Waterhouse, Cat. Brit. Col. 31 (1858).

Stephens's description of *O. planum*, Illust. Mand. v. 346 (1834); Man. Brit. Col. 427, 3415 (1839), appears to apply to the insect under consideration, and could certainly

not have been drawn up from the specimen of *O. concinnum* which now stands as the exponent of the species in his cabinet. The first example of this species which came under my notice was taken by Mr. Wollaston at Penheale, Cornwall; I subsequently met with it at Colney Hatch, Hampstead, Darenth and Shirley, and Mr. Edwin Shepherd has captured it near Putney. It occurs, but very sparingly, beneath the bark of decaying trees.

83. Omalium exiguum, Gyll.; Waterhouse, Cat. Brit. Col. 31 (1858).

The descriptions of *O. exiguum*, Steph. Mand. v. 350, 13 (1834); Man. Brit. Col. 428, 3427 (1839), are abridged from Gyllenhal, Ins. Suec. ii. 218, 17 (1810); the insect, however, so designated by the Swedish Entomologist, appears to have been unknown to Stephens. Mr. Wollaston captured it at Killarney, and I have taken it on several occasions in the neighbourhood of London.

84. Omalium pygmæum, Payk., Eric.; Waterhouse, Cat. Brit. Col. 32 (1858).

This species appears to be unrepresented in Mr. Stephens's Collection: his descriptions, Illust. Mand. v. 356, 30 (1834); Man. Brit. Col. 430, 3444 (1839), are evidently copied from Gyllenhal, Ins. Suec. ii. 223, 22 (1810), and therefore apply to the insect before us, which occurs, but very rarely, in boleti and beneath bark of decaying trees. The first specimen which came under my observation was captured near Norwich by Mr. Wollaston. I have taken solitary examples at Colney Hatch and near Croydon, and Dr. Power has secured an individual near Alverstoke, Hants.

85. Omalium inflatum, Gyll.; Waterhouse, Cat. Brit. Col. 32 (1858).

86. MEGARTHRUS SINUATOCOLLIS, Lacord., Eric.; Hardy, in Murray's Cat. Scot. Col. 134 (1853); Waterhouse, Cat. Brit. Col. 32 (1858).

Mr. Hardy considered that this insect was probably identical with *M. depressus*, Steph., but as it proves not to be so, according to Mr. Waterhouse, and to be totally unrepresented in his cabinet, the merit of first identifying it as an inhabitant of Britain is due to Mr. Hardy.

"Berwickshire, Dalmeny, Aberdeenshire;" common in garden rubbish at Finchley and Highgate, and occasionally in putrid fungi at Hampstead.

87. MEGARTHRUS HEMIPTERUS, Illig.; Hardy in Murray's Cat. Scot. Col. 134 (1853); Waterhouse, Cat. Brit. Col. 32 (1858).

M. rufescens, Steph., turns out to be a pale variety of *M. denticollis*, Beck, and not, as Mr. Hardy conjectured, synonymous with the present species. Appears to be of very rare occurrence in Britain; it is found in putrid fungi, and has been taken by Mr. Wollaston at Scawby, Lincolnshire, by Mr. T. P. Dossetor and myself at Mereworth, Kent, and I have met with single examples near Highgate and Mickleham.

88. HISTER MARGINATUS, Eric.; Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6072 (1858).

Distinguished from *H. carbonarius*, Ent. Hefte, with which it is not improbably mixed up in many collections, by its uniformly smaller size, sub-orbicular outline, and by the anteriorly abbreviated second striæ, which reach the middle only of the elytra, while the first and third are entire, or very nearly so.

89. SAPRINUS IMMUNDUS, Gyll.; Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6072 (1858).

Taken at the mouth of the Orwell, in September, by Mr. Waterhouse, and at Deal by Dr. Power and Mr. F. Smith.

90. Saprinus metallicus, F. (*nec* Steph.); Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6073 (1858).

Discovered at Deal by Mr. F. Smith.

Distinguished from *S. rugifrons*, Payk. (*metallicus*, Payk., Gyll., Steph.), by its smaller size, more convex ovate form, and by the anterior tibiæ having five denticulations only on their outer edge.

91. Acritus nigricornis, Ent. Hefte; Waterhouse, Proc. Ent. Soc. 5 April, 1858, Zool. 6073 (1858).

Taken by Mr. Wollaston at Spridlington, Lincolnshire, and by Mr. Waterhouse in the corridor of the Crystal Palace; indicated as a native of Britain by De Marseul in his Mon. Hist. Ann. de la Soc. Ent. de France, 3ième Ser. iv. 613, 12 (1857).

This species is distinguished from *A. minutus*, Hbst., by the sub-quadrate form of the mesosternum, its marginal stria dividing at each anterior angle, and by the more elongate prosternum. The colour of the antennæ appears scarcely to differ in the two species, and the fine striæ on the elytra, on which Mr. Waterhouse laid great stress as a diagnostic, though not alluded to in his written and published communication, are certainly not a distinguishing character of *nigricornis*, being not unfrequently conspicuous in *minutus*. Found in company with *minutus* in dung-heaps, hot beds, and vegetable and animal refuse.

In *Hister nigricornis*, Ent. Hefte, and *H. minutus*, Hbst., the posterior tarsi consist of four articulations only, a structural peculiarity noticed by Redtenbacher, Faun. Austr. 242 (1849), and on which, and the perpendicularly deflexed

pygidium, Leconte founded the genus *Acritus*, Proc. Acad. Nat. Sc. Philadelph. vi. 287 (1853).

92. TRICHOPTERYX CONVEXA, Matthews, Zool. 6107 (1858) (described).

"Oxfordshire."

93. TRICHOPTERYX THORACICA, Gillm.; Matthews, Zool. 6109 (1858).

94. TRICHOPTERYX BREVIPENNIS, Eric.; Matthews, Zool. 6109 (1858).

95. TRICHOPTERYX SIMILIS, Gillm.; Matthews, Zool. 6109 (1858).

96. PTERYX MUTABILIS, Matthews, Zool. 6106 (1858) (described).

97. PTINELLA BRITANNICA, Matthews, Zool. 6032 (1858) (described).

"Oxfordshire."

98. MICRUS FILICORNIS, Fairm. and Laboulb.; Matthews, Zool. 6109 (1858).

99. MICRUS PULCHELLUS (Alib.), Gillm.; Matthews, Zool. 6109 (1858).

100. PTILIUM FUSCUM (Waltl.), Eric.; Matthews, Zool. 6110 (1858).

101. PTILIUM CANALICULATUM (Maerk.) Eric.; Matthews, Zool. 6110 (1858).

102. SPHÆRIUS ACAROIDES, Waltl.; Matthews, Zool. 6032 (1858).

Found in June, 1854, on a wall in a garden in Oxfordshire.

103. BLAPS MORTISAGA, L., Gyll., Mulsant, *nec* Steph.; T. J. Bold, Zool. 5974 (1858) (described).

"Near Elgin, Morayshire."

104. Hallomenus humeralis, F.

Hallomenus humeralis, Panzer, Faun. Ins. Germ. xvi. 17 (1794); Gyll. Ins. Suec. ii. 527, 1 (1810); Redtenb. Faun. Austr. 610, 2 (1849); 2nd ed. 628, 2 (1858).

Dircæa humeralis, F., Syst. El. ii. 91, 10 (1801).

Two specimens taken by Mr. Pelerin, in July last, near Hornsey, Middlesex, in a rotten willow.

M. E. Perris, in his admirable Essay on the insects which infest *Pinus maritimus*, Annales de la Soc. Ent. de France, 3ième Ser. v. (1857), has elaborately described and figured the metamorphoses both of this species* and of *H. flexuosus*, Payk.,† and directed attention to the striking and important differences which exist, especially in the larvæ of the two species, in the number and disposition of the ocelli, the structure of the maxillæ, mentum and mandibles, and the conformation of the terminal abdominal segment; discrepancies, he remarks, to which we are unaccustomed in larvæ of the same genus, and which give rise to grave doubts as to the propriety of so intimate an association of the two species.

Fig. 8.

105. Tomicus Saxesenii, Ratzeb.? E. C. Rye, Entom. Weekly Intelligencer, 28 Nov. 1857, 70.

Found by Mr. Rye on the 11th of October in a decayed elm on Wandsworth Common.

106. Lema Erichsonii, Suffrian; Waterhouse, Proc. Ent. Soc. 7 Sept. 1857.

Found by Dr. Power, in Ireland, early in the autumn of 1857. A specimen is extant in the cabinet of the late

* Page 382, tab. 9, figs. 481—490.

† Page 378, tab. 9, figs. 473—480.

Mr. Stephens, who had evidently recognized it as a distinct species, having set it apart, but without a label.

This insect resembles on a cursory inspection the common *L.* (*Crioceris*) *cyanella*, *L.*, so nearly that it may possibly be found mixed up with it in some of our collections. It differs in being a trifle larger, in the thorax being widest a little before the middle, its disc exceedingly finely punctate, with three irregular longitudinal rows of larger punctures; the elytra are more finely punctate-striate, the interstices transversely wrinkled.

107. CRYPTOCEPHALUS IMPERIALIS, F.; Waterhouse, Proc. Ent. Soc. 7 Sept. 1857.

Found by Dr. Power some years since on the Gogmagog Hills, Cambridgeshire. Identified by Mr. Edward Sheppard.

Fig. 5.

108. CRYPTOCEPHALUS VARIABILIS, Schneider; Waterhouse, Proc. Ent. Soc. 7 Sept. 1857.

Confounded by Dr. Leach and Mr. Stephens with its near ally *C. sexpunctatus*, L., a single specimen having been detected in each of their cabinets mixed up with that species; no clue exists, it would appear, to the localities in which these specimens were taken.

The following require further investigation ere they can be admitted as species new to our list.

NEBRIA NIVALIS, Payk.; E. W. Janson, Proc. Ent. Soc. 6 Sept. 1858, Zool. 6252 (1858).

I have only recently had an opportunity of examining the two specimens referred by Mr. Squire to this species, and which certainly present the characters attributed by Drs.

Kraatz and Schaum to the variety of *N. nivalis* with pitchy black femora; but among the *Nebriæ* collected by Mr. Squire in the Shetland Isles I find an individual, which, as regards the proportions of the thorax and the depth of the elytral striæ, is intermediate between the two specimens called by him *nivalis* and the insect now denominated *Gyllenhalii* (*nivalis*, Dawson); it has, moreover, the legs entirely rufous; hence the twofold doubt arises, whether the specimens supposed by Mr. Squire to pertain to *N. nivalis*, Payk., Kraatz, Schaum, are in reality referrible thereto; and, if they be so, whether it can be maintained as a species.

Patrobus lapponicus, Chaudoir? E. W. Janson, Proc. Ent. Soc. 6 Sept. 1858, Zool. 6253 (1858).

Clova Mountains, Mr. Murray; Shetlands, near Lerwick, Mr. H. Squire; North Wales, Rev. H. Clark; Northumberland, Dr. Power. Specifically distinct, I believe, from the *P. excavatus*, Payk., Dawson, from which its short broad and convex thorax, the coarse sculpture of that segment and of the head, together with its deep black hue, serve readily to distinguish it. Dr. Schaum informs us, Naturgesch. d. Ins. Deutschl. i. 376 (1858), that *Patrobus Lapponicus*, Chaudoir, is described from an unique specimen, and requires further confirmation.

2, Alma Road, Upper Holloway,
November 10*th*, 1858.

LEPIDOPTERA.

New British Species in 1858.

(By the Editor.)

The almost unprecedented heat of last June, coming so closely on the heels of the unusually hot summer of 1857, has had a most extraordinary effect on insect life.

Many species that are usually rare have been taken in some plenty; species that are generally limited to a few of our southern counties have wandered far further north this year; *Colias Edusa* has gladdened the eyes of many a north country Entomologist, and some South European species, not previously added to our lists, have now found a place there.

How the heat of the weather produces these effects is a problem which we are not prepared to solve, and which will probably long serve to puzzle the rising generation of Entomologists.

That *Micra Ostrina*, not taken here since 1826, should occur simultaneously in different parts of the country, is certainly startling—though from all accounts the habit of the insect is so retired that it seems but natural, even if the insect were about, that it should escape observation.

Our list of novelties is far better than usual, and the occurrence of *Notodonta bicolora* in the south-west of Ireland will certainly tempt many next summer to visit that part of the country, where we are told it is not improbable that *Charaxes Jasius may* occur.

Entomologists should bear in mind that amongst the best early captures next spring will be hybernated specimens of *Vanessa Antiopa*.

The following is the list of New British Species in 1858:—

BOMBYCINA.

Notodonta bicolora.

NOCTUINA.

Xanthia ocellaris.
Hadena peregrina.
Micra parva.
Catephia alchymista.

GEOMETRINA.

Eupithecia viminata.

PYRALIDINA.

Diasemia Ramburialis.
Nola Centonalis.
Acrobasis rubrotibiella.

TORTRICINA.

Catoptria parvulana.

TINEINA.

Swammerdamia Pruni.
Gelechia leucomelanella.
„ ocellatella.
„ subdecurtella.
Harpella Bracteella.
Glyphipteryx Cladiella.
„ Schœnicolella.
Coleophora Salinella.
Elachista stabilella.
„ perplexella.
„ Cingillella.
„ Caricis.
Cemiostoma Lotella.
„ Wailesella.
Nepticula Pomella.

NOTODONTA BICOLORA, Fabricius.

(Fig. 4.)

A specimen of this conspicuous and pretty species was taken near Killarney, last July, by Mr. Bouchard, in an extensive birch wood. The specimen is in Mr. Waring's collection.

On the Continent the perfect insect appears in May and June, and the larva (figured by Freyer, N. B. iii. Pl. 212), feeds on birch in July.

XANTHIA OCELLARIS, Borkhausen.

The capture of this species at Brighton has been recorded; see "Intelligencer," vol. v. p. 36.

HADENA PEREGRINA, Treitschke.

Not very closely allied to any of our known species. In September, 1857, Mr. Bond took a specimen at Freshwater, in the Isle of Wight; the insect is a native of Southern Europe and attached to low coasts.

MICRA PARVA, Hübner.

(Fig. 1.)

Of this insect, execrably figured by Hübner, a passable likeness is given by Duponchel (under the name of *Minuta*); his description, however, is far more satisfactory than his figure.

Several years ago Mr. Doubleday saw a specimen which had been taken at Teignmouth by Mr. Jordan, but it was so mutilated as to be unrecognizable.

In the past summer Dr. Battersby of Torquay has been fortunate in obtaining two specimens, of which he has, at my request, sent the following notice.

"My daughter having found a specimen of *Micra Ostrina* in June, I was induced to go with my children the two following mornings and make a close search along the coast wherever the cliffs are accessible, and, having a good many little eyes at work, we were fortunate enough to meet with five more; they occurred at three places in an extent of about three miles, and were met with from half-way down the cliffs to the water's edge. We found *Micra parva* only in one place, and saw but two specimens, both of which were

captured; they, as well as an *Ostrina*, lay very close among the grass and brambles, and when disturbed did not fly more than a yard or two, *Ostrina* settling on the ground and *Parva* on plants: this was the only difference I observed in their habits; indeed, until I was able to examine both carefully at home, I considered that I had merely taken the two sexes of *Ostrina*. We searched the cliffs with great care for nearly a week after, but without seeing a trace of more."

Dr. Staudinger informs us that the larva of *M. Ostrina* feeds in the shoots of thistles; that of *M. parva* may have a similar habit.

Catephia alchymista, W. V.

Of this most conspicuous and striking species, of which we hope to give a figure next year, a single specimen was taken in September this year at sugar by Dr. Wallace in the Isle of Wight.

The larva feeds on oak in July and August, the perfect insect appearing naturally in June of the following year; hence its capture in September must be considered exceptional.

This is not the *Leucomelas* of Haworth, of which he says, "Mr. Francillon possesses an English specimen;" the Francillonian specimen may still be seen amongst the doubtful British species in the possession of Mr. Shepherd.

Eupithecia viminata, Doubleday.

This obscure species, described by Mr. Doubleday in the "Zoologist" last summer, p. 6103, appears to frequent the osier: it has occurred in several localities, but its want of distinctness has perhaps caused it to be overlooked.

Diasemia Ramburialis, Duponchel.

(Fig. 3.)

A specimen of this insect, which had previously only been recorded as occurring at Vienna and Corsica, was taken at Probus in Cornwall by Mr. Boyd, on the 16th of June," a single specimen flying in a swamp at dusk" (Int. vol. iv. p. 151). Duponchel states that it occurs in marshy places in the Isle of Corsica, in April and August.

Nola Centonalis, Hübner.

A specimen of this species, which may readily be distinguished from *Cristulalis* by the more stumpy anterior wings and the different form of the elbowed line, was taken at light on the 1st of July, at Bembridge in the Isle of Wight, and was exhibited by Dr. Wallace at the August meeting of the Entomological Society of London.

Herrich-Schäffer has figured this species in his second volume, figures 141 and 142.

Acrobasis rubrotibiella, Mann.

Two specimens of this novelty were taken by Mr. M'Lachlan flying round an oak tree near Forest Hill, and were exhibited at the September meeting of the Entomological Society.

The species is closely allied to *A. tumidella,* but differs from it in the following respects:—

1°. The basal portion of the wing, instead of being orange, is a pale grey, with a red streak along the costa; 2°. instead of the broad orange band beyond the black first line there is only a slender red band; and 3°. the hind margin of the wing is straighter and less oblique.

CATOPTRIA PARVULANA, Wilkinson, MS.

This little species reminds one somewhat of a dwarf *Cæcimaculana*, but is darker and has the markings more shining. It was taken by Mr. Bond in the summer of 1857, in the Isle of Wight, amongst dwarf thistles.

SWAMMERDAMIA PRUNI, Stainton (Int. iv. p. 91.)

The larva of this species, found by Mr. Parfitt of Exeter on plum, is so strikingly different from the other larvæ which we know of the genus, that there can be little doubt of the distinctness of the species; although the only specimen yet bred of the perfect insect so closely resembles *S. griseocapitella*, that a series will be necessary in order to ascertain its distinctive characters.

GELECHIA LEUCOMELANELLA, Zeller.

Alis anticis nigris, fascia obliqua ad dorsum latiore ante medium, nebulaque in medio indistincte albidis, maculis duabus posticis albis, costali majore ac posteriore.

Exp. al. 6 lin.

Head and face blackish. Second joint of the palpi greyish-ochreous, terminal joint black. Antennæ blackish, with very slender paler annulations. Anterior wings black, with some scattered whitish scales; not far from the base is an obliquely placed whitish fascia, broadest on the inner margin, and nearly on the middle of the disc is an indistinct whitish cloud; beyond are two distinct white marginal spots, of which that on the costa is the larger and placed nearer to the apex of the wing; cilia grey.

This is another species added to our lists by the untiring energy of Mr. Boyd, who found the larva mining the shoots

of *Silene maritima* at the Lizard in Cornwall, May 18th, 1858. The insect is referable to the *Tricolorella* group, but it is easily recognized by the clear black and white markings.

GELECHIA OCELLATELLA, Stainton.

Alis anticis griseis, ochraceo-suffusis, dorso dilutiore, *punctis tribus nigris ochraceo-circumcinctis, fascia postica, parum angulata, dilute ochracea; margine postico ochraceo-punctata.*

Exp. al. 6 lin.

Head and face greyish-ochreous, sometimes with a reddish tinge. Palpi greyish; terminal joint pale ochreous, with a black spot externally at the base and a black ring before the apex. Antennæ dark grey. Anterior wings dark grey, much dusted with ochreous, especially along the inner margin, which hence appears paler; in the middle of the wing are three black spots, one on the fold and two beyond it on the disc, the second of which is generally itself composed of two small spots; all are surrounded with ochreous rings, giving the insect an ocellated appearance; towards the hind margin is a pale, ochreous, angulated fascia, divided in the middle by a dark grey dash; an indistinct row of pale ochreous spots precedes the hind margin; cilia pale grey, with a faint ochreous tinge. Posterior wings pale grey, with pale greyish-ochreous cilia. Abdomen dark grey.

This species is allied to *G. instabilella* and *obsoletella*, but the anterior wings are much shorter than in *Instabilella*, and in form much more nearly resemble *G. obsoletella*, yet in that species the upper half of the sub-apical fascia is more perpendicular, and the basal half of the abdomen is ochreous-grey. These are differences which preclude the possibility of *Ocellatella* being a form of either of those species.

Except a few specimens taken by Mr. Wollaston at Porto

Sancto, this species was entirely unknown, till Mr. Boyd met with it in Cornwall at the Lizard last May. Mr. Boyd also met with the larva at the same time feeding in the flower-heads of *Beta maritima*.

Gelechia subdecurtella, n. sp.

Alis anticis costam versus cæruleo-griseis, dorsum versus ochraceis strigulis duabus obliquis fuscis abbreviatis ante medium, altera recta integra pone medium, fascia postica subargentea, punctis duobus disci nigris.

Exp. al. 6 lin.

Allied to *Subericinella*, *Decurtella* and *Ericinella*, but abundantly distinct. I have seen but two specimens (and therefore abstain for the present from a more detailed description), which were taken in the Cambridge Fens by Mr. Bond last June.

Harpella Bracteella, Linn.
(Fig. 2.)

Alis anticis basim versus luteis, postice brunneis cæruleo-fasciatis, macula costali lutea apicem versus; ciliis apicis albis.

Exp. 8 lin.

Head and face yellow. Palpi brown, the second joint yellow beneath, and the base and extreme tip of the terminal joint yellow. Antennæ dark brown, spotted with white along the back. Anterior wings bright yellow at the base, with a short dark blue streak along the costa; from before the middle the ground colour of the wings is dark brown, traversed by a narrow blue fascia nearly in the middle, an oblique transverse blue streak beyond the middle, and another parallel to the hind margin; between these last two

blue streaks is a large yellow spot on the costa; cilia dark brown, but the tips of the apical cilia white.

This conspicuous and pretty species has long held a place among the reputed British insects, and is figured in Wood's Index: its recurrence was recorded in the "Intelligencer," vol. iii. p. 179, Mr. Backhouse having sent me for examination a specimen, "which was taken near Gateshead, along with two or three more, by a young collector in a garden, flying about some old tree stumps, in the summer of 1857." Mr. Backhouse has very liberally enriched my Collection by the addition of this species.

The larva is a rotten-wood feeder, and I had no doubt fed on the old tree stumps. I have received it from Herr Grabow, of Berlin, feeding in the bark of mulberry trees.

Glyphipteryx Cladiella, n. sp.

Alis anticis saturate viride æneis, strigulis nullis, *pone medium nigro-striatis, angulum analem et apicem versus nigro-squamato.*

Exp. al. 6—6½ lin.

Allied to *G. Thrasonella*, but with *no* silvery streaks.

This species has been collected during the two past seasons by Mr. Bond, in Wicken Fen, near Cambridge; the specimens do not vary, so that it does not appear to be a form of *Thrasonella*. It was taken flying singly over the tall sedge; and, as that fen abounds with *Cladium mariscus*, I should not be surprised to find that the larva feeds on the seeds of that plant.

Glyphipteryx Schœnicolella, Boyd.

Alis anticis angustulis *saturate æneo-griseis, strigula angusta curvata ex medio dorsi, strigulis posticis quinque costæ,*

una dorsi albis, apicibus argenteis, macula violacea supra angulum analem, puncto apicis atro.

Exp. al. $4\frac{1}{2}$ lin.

In size this resembles *G. equitella* and *G. oculatella*, but the anterior wings are much narrower, and the first dorsal streak is much more slender; besides the anterior wings have not the base pale as in *Equitella*, nor has the apical black spot a silvery pupil as in *Oculatella*.

For the discovery of this species we are indebted to Mr. Boyd, who met with it in Cornwall, at the Lizard. "A species of *Glyphypteryx* was swarming amongst *Schœnus nigricans*, and on examination I found the seed-heads eaten, and an empty cocoon in the centre of many. The next day I collected a number of the heads, and had the pleasure of rearing several." Int. vol. iv. p. 144.

Coleophora Salinella, n. sp.

Alis anticis latiusculis, breviusculis dilute ochreis, griseo-irroratis, ciliis dilutioribus; palporum fasciculo nullo articuloque tertio brevissimo.

Exp. al. 6—$6\frac{1}{2}$ lin.

Closely allied to *C. annulatella*, but the anterior wings shorter and broader; the cilia at the anal angle much paler, and the structure of the palpi very different, the second joint being unprovided with a tuft, and the third joint being so remarkably short.

Several specimens were taken by Mr. Douglas last August at Seaford, amongst *Atriplex portulacoides*.

Elachista stabilella, Stainton.

Hitherto confounded with *Consortella*, but distinguished

by the whiteness of the head and the obliqueness of the fascia.

It occurs at Headley Lane, near Mickleham, in June and July (see Trans. Ent. Soc. vol. iv. N. S. (Part 8), p. 303).

Elachista perplexella, Stainton.

This species had hitherto been confounded with *Subnigrella*, from which it differs by the anterior wings being blacker, and the spots more nearly opposite.

The larva feeds in the leaves of *Aira cæspitosa*, and it has occurred at Beckenham, Scarborough and near Edinburgh (see Trans. Ent. Soc. vol. iv. N. S. (Part 8), p. 308).

Elachista Cingillella, Fischer.

Among the species which have only a single pale fascia on the anterior wings and have the head dark, this is especially distinguished by the slenderness and whiteness of the fascia.

Mr. Allis has a specimen taken in the North of England some years ago (see Trans. Ent. Soc. vol. iv. N. S. (Part 8), p. 312).

Elachista Caricis, n. sp.

Closely allied to *E. Rhynchosporella*, but darker; the hinder margin of the anterior wings more truncate, and the sub-apical costal spot placed more perpendicularly.

I bred several of this insect from larvæ collected by Mr. Winter and myself at Ramworth at the end of April; they were mining the leaves both of *Carex paniculata* and *Carex paludosa*, simultaneously with the larvæ of *Elachista Gleichenella*. The specimens thus obtained, when placed beside a series of *Rhynchosporella* and *Eleochariella*, ap-

pear quite distinct; future investigation must prove the correctness of this assumption.

Cemiostoma Lotella, Stainton.

Alis anticis angustulis *plumbeis, postice cupreis,* apice nigro, *maculis duabus costæ albis, macula atra violaceo-pupillata ad angulum analem, ciliis albidis cum striis quatuor radiantibus nigris.*

Exp. al. $2\frac{1}{2}$ lin.

Very closely allied to *C. scitella,* but the anterior wings are narrower; the apical portion of the wing, whence the radiating lines in the cilia start, is black instead of coppery; besides, the radiating lines are darker than in *C. scitella,* and the position of the two lower ones is quite different; in *C. scitella* one of these projects straight out at the end of the wing (or even droops a little), and the other droops considerably; in *C. Lotella* the one points slightly upwards and the other slightly downwards.

This species was detected by Mr. T. Wilkinson, who bred it from larvæ collected near Scarborough, mining in the leaves of *Lotus major,* and which at the time were supposed merely to have been larvæ of *Nepticula Cryptella.* Mr. Wilkinson again met with the larvæ this summer (see Int. vol. iv. p. 117).

Cemiostoma Wailesella, Stainton.

Allied to *C. Laburnella* and *Spartifoliella,* but smaller, and with a faint bluish tint (see Int. vol. iv. p. 44).

In order to describe this species satisfactorily, it will be necessary to wait till we can examine an extensive series of bred specimens.

The insect is widely distributed, having occurred at Tunbridge Wells, near Newcastle-on-Tyne and at Mottram.

Nepticula Pomella, Vaughan.

Allied to *Pygmæella*, but the anterior wings rather broader and more purple. A detailed notice of the larva, mine and cocoon has been given by Mr. Vaughan (see Int. v. p. 44). It is a garden insect, frequenting apple trees, in the leaves of which the larva mines.

OBSERVATIONS ON BRITISH TINEINA.

(Supplementary to the Insecta Britannica—Lepidoptera, Tineina; and the Entomologist's Companion, 2nd Edition.)

Adela Fibulella, I. B., p. 49. The larva has been found by Herr O. Hofmann feeding on the seeds and leaves of *Veronica Chamædrys* (Int. vol. iv. p. 185).

Laverna propinquella, I. B., p. 236. I have bred this from larvæ sent me in February by Mr. Wilkinson; the larvæ were mining the young leaves of *Epilobium hirsutum*.

Laverna phragmitella, I. B., p. 238 (E. A. 1858, p. 110). The larva feeds in the heads of the *Typha*, secreting itself in the woolly down, where it is about as easy to find "as a needle in a bottle of hay."

Elachista magnificella, I. B., p. 251. The larva mines the leaves of *Luzula pilosa*, in April and May. The habit was discovered in three different localities by three Entomologists, each unaware of the researches of the others.

Elachista trapeziella, I. B., p. 254. This larva was discovered by Mr. Scott in the leaves of the *Luzula pilosa*, and subsequently collected freely by Mr. T. Wilkinson (see Zoologist, 1858, p. 6146).

Elachista Rhynchosporella and *Eleochariella*, I. B., p. 259 and 260. Both these species? have been bred from larvæ in *Eriophorum angustifolium* (Cotton-grass), and both from larvæ in a *Carex*. Yet I am still unwilling to view them as identical.

Trifurcula pulverosella, I. B., p. 307. This species has been bred from the "*Nep.* larva making *blotches* in the apple leaves" (see Ent. Comp. p. 127, and Int. iv. p. 14).

ANSWERS TO ENIGMAS.

Answers to Enigmas in the Entomologist's Annual, 1855, 1st Edition, p. 63; 2nd Edition, p. 81.

11. Not yet solved.

Answers to Enigmas in the Entomologist's Annual, 1856, p. 63.

18. From information I have received from Professor Frey there seems no doubt but that the *Lithocolletis* larva mining the *upper* side of birch leaves is truly the *L. Betulæ* of Zeller.

20. Not yet solved.

Answers to Enigmas in the Entomologist's Annual, 1857, p. 13.

26. Not yet solved.
27. Not yet solved.
28. *Coleophora limosipennella.*
29. *Coleophora Siccifolia.*
31. Not yet solved.
32. *Coleophora Albicans.*

Answers to Enigmas in the Entomologist's Annual, 1858, p. 115.

33. Not yet solved.
34. *Cemiostoma Wailesella.*

35. *Coleophora Therinella.*
36. *Tischeria Dodonæa,* Stainton, n. s.
37. Not yet solved.
38. Not yet solved.
39. *Coleophora albicostella,* Duponchel.
40. *Coleophora,* n. s., near *Vulnerariæ,* bred by Professor Frey.
41. Not yet solved.
42. *Butalis torquatella.*
43. *Coleophora Cornuta,* Frey, n. s.
44. *Nepticula Agrimoniæ,* Frey, n. s. (Int. iv. p. 43).
45. *Nepticula Freyella,* Heyden, n. s. (Int. iv. p. 175).

ENIGMAS STILL UNANSWERED.

11. "An *Elachista* larva, found by Mr. Scott at the end of April, mining the leaves of *Scirpus lacustris.*" No one appears to have again found this.

20. "A *Depressaria* larva, found by Mr. Boyd, May 2nd, 1855 (it was then young), feeding on a leaf of parsnip (*Pastinaca sativa*) under a turned-down corner; this was expected to be *Depressaria Douglasella.*" This has not again been met with.

26. "A *Nepticula* larva, mining the leaves of birch; the mine has some resemblance to that of *Nep. luteella,* but the central track of excrement is broader, not so mathematically linear."

27. "A *Gelechia?* larva, feeding in the heads of yarrow (*Achillea millefolium*)."

31. "A *Coleophora* larva, feeding on *Vaccinium Myrtillus* in a longish slender case, *somewhat* like that of *Viminetella*." Professor Zeller thinks that this should be *C. orbitella*.

33. "A brown *Gelechia*-like larva, found amongst moss by Mr. Douglas in March, 1857."

37. "A *Coleophora* larva, found on birch at West Wickham, October 31st, 1857, in a case which had much the appearance of a birch bud."

38. "A *Lithocolletis*, mining the *upperside* of beech leaves."

41. "A *Gelechia?* larva, long and thin, of a pale dull yellowish; feeding on thyme, eating the leaves half through from the underside, and concealing itself in tubes of sand, spun together with silk." Professor Zeller has this year bred *Butalis siccella*, and he believes from the above-mentioned larvæ.

NEW ENIGMAS FOR SOLUTION.

46. A pretty red-spotted yellow larva mining a leaf of *Carex riparia*, found at Hackney, March 29th. Is there any possibility of this being *Cosmopteryx Lienigiella?* Only one larva was found, and that escaped when half figured; *Cosmopteryx* larvæ are excessively apt to crawl away.

47. A *Gelechia?* larva mining down the stems (near the root) of *Carex paludosa*, collected at Wicken Fen, near Cambridge, April 30th. These were very young, and all died. Some local Entomologists may be more successful in rearing this species.

48. A larva mining in the stems of the shoots of *Rhamnus frangula*, near Guildford, causing the leaves to droop; collected May 21st, 1858. It was imagined that this would have produced *Laverna Rhamniella*, but the larvæ all escaped or died.

49. A grotesquely minute, pistol-form *Coleophora* case, collected by Mr. Gregson, on *Salix fusca*, at the end of May. These only produced ichneumons.

50. A *Tortrix?* larva mining down the stems of *Centaurea nigra*, and ejecting its "frass" from a hole in the side of the stem; collected by Mr. Boyd at Probus, in Cornwall, June 19th (see Int. iv. p. 151).

56. A *Lithocolletis* larva mining the underside of the leaves of *Helianthemum vulgare*, collected near Ratisbon, Bavaria, by Herr F. Hofmann, at the end of June. I only reared one miserable cripple, which was unrecognizable; it appears to be new.

57. A *Gelechia?* larva feeding inside the flowers of *Campanula persicifolia* was collected by Herr O. Hofmann (then at Erlangen) at the end of June. None were reared.

58. A *Cosmopteryx?* larva, found by Mr. Scott, near Middlesboro' on Tees, July 12th, mining down the midribs of the leaves of *Centaurea Scabiosa*, making a small blotch on the upper side, and ejecting its black excrement. I succeeded in getting one larva into pupa, which subsequently presented me with an ichneumon!

59. A *Gelechia?* larva feeding in the fruit of the barberry

(*Berberis vulgaris*) was collected by Herr F. Hofmann, at Ratisbon, at the end of August.

60. A *Coleophora* larva was found by Herr F. Hofmann at the same time feeding on lime; the case was cylindrical, and rather wrinkly, like the case of *Vitisella*, with the mouth turned downwards.

61. A small larva, feeding gregariously in sloe leaves, was found by Herr F. Hofmann at the same time, but this may perhaps only be the young of *Scythropia Cratægella*.

62. A *Nepticula* larva in lime, distinct from *N. Tiliæ*, collected by Mr. Vaughan, near Bristol, September 14th, along with larvæ of *N. Tiliæ*. The mine of the new species is visceriform.

63. A *Coleophora* larva, supposed to be that of *Binotapennella*, was collected at the beginning of October, on the seeds of *Atriplex portulacoides*, by Mr. Bond, in the Isle of Wight.

64. A larva mining the leaves and boring the stems of *Chenopodium maritimum*, collected by Mr. Bond at the same time, is probably that of *Gelechia obsoletella*.

65. A *Nepticula* larva mining the leaves of *Helianthemum vulgare* was collected by Herr F. Hofmann early in October.

66. A *Nepticula* larva (supposed to be that of *N. Argyropeza*), mining close to the foot-stalk of the leaves of *Populus alba*, was collected in October by Senator von Heyden, near Wiesbaden, and by Mr. Vaughan, near Bristol.

67. An *Ornix?* larva collected by Herr Schmid, at Frankfort-on-the-Maine, in apple leaves. This differs in habit and appearance considerably from the larva of *O. guttea*.

68. A *Coleophora?* larva, discovered by Mr. Scott at Brighton, October 14th; it bores the stems and shoots of

Salicornia, throwing out much ochreous-white "frass," and using a piece of bored stem for a portable case. To change to pupa, Mr. Scott observes that it quits this case and enters the ground. Can this be a true *Coleophora?*

69. *Gelechia marmorea* has been bred from sand-cocoons, collected on Dawlish Warren by the Rev. J. Hellins. The habit of the larva yet remains to be detected.

NATURAL HISTORY OF THE TINEINA.

During the past year sixty-one larvæ have been described, seventy have been figured, and the mines of nine others, which had died in transit, have also been figured.

Material has thus been accumulated within the year for nearly three volumes of the "Natural History of the Tineina," but it must be anticipated, that, as we penetrate deeper in our researches, the result will be less productive.

Our main chance lies in developing *new observers in new localities.*

It will be seen that one Entomologist has attained the promised distinction, and several others are following closely in his wake. This should serve as an encouragement to those who are still at the bottom of the ladder.

I annex, as in the two preceding Annuals, a Table, showing the amount of assistance I have received during the past twelve months.

		Discovered.	Sent.	Bred.	Known before.
Adela Fibulella	Hofmann....	·50	·25	·25	
*Swammerdamia Pruni.....	Parfitt	·50	·25	25	
*Cerostoma antennella	Mühlig	..	..	..	·25
* costella	Mühlig	..	..	..	·25
Depressaria Hofmanni	Hofmann....	·50	·25	·25	
Libanotidella	Hofmann....	..	..	..	·25
	Frey.....	..	..	..	·25
Dictamnella	Hofmann....	..	..	..	·25

		Discovered.	Sent.	Bred.	Known before.
Gelechia scintillella	Mühlig	·50	·25	·25	
leucomelanella	Boyd	·50	·25	·25	
* ocellatella	Boyd	·50	·25	·25	
leucatella	Mühlig	..	..	..	·25
Farinosæ	Frey	·50	·25	·25	
*Œcophora minutella	Edleston	..	..	..	·25
Butalis torquatella	Mühlig	·50	·25	·25	
Glyphipteryx Haworthana	Chappell	..	..	..	·25
Argyresthia glaucinella	Edleston	..	..	..	·25
*Gracilaria Limosella	Frey	·50	·25	·25	
Ononidis	Frey	..	..	..	·25
	Zeller	..	..	..	·25
Coleophora ditella	Hofmann	..	..	..	·25
Vibicella	Fletcher	..	..	..	·25
Lugduniella	Millière	·50	·25	·25	
conspicuella	Hofmann	..	..	..	·25
n. sp. near Vulnerariæ	Schmid	..	·25	..	
	Frey	..	..	·25	
albidella	Winter	..	..	..	·25
	Gregson	..	..	..	·25
palliatella	Bond	..	..	..	·25
auricella	Hofmann	..	..	..	·25
Chamædryella	Bruand	·50	·25	·25	
virgatella	Hofmann	..	..	..	·25
leucapennella	Mühlig	·50	·25	·25	
murinipennella	Wilkinson	..	..	..	·25
* fuscocuprella	Hofmann	..	..	..	·25
Vitisella	Edleston	..	..	..	·25
* Cornuta	Mühlig	·50	·25	·28	
Chauliodus Illigerellus	Mühlig	..	..	..	·25
Oinophila V-flava	Mühlig	..	..	..	·25
Laverna propinquella	Wilkinson	·50	·25	·25	
Phragmitella	Brown	·50	·25	·25	
Elachista Trapeziella	Scott	·50	·25	·25	
Rhynchosporella	Wilkinson	·50	·25	·25	
Caricis	Winter	·50	·25	·25	
Pollinariella	Frey	·50	·25	·25	
Cemiostoma Lotella	Wilkinson	·50	·25	·25	
* Wailesella	Wailes	·50	·25	·25	
Bucculatrix maritima	Vaughan	..	..	..	·25

		Discovered.	Sent.	Bred.	Known before.
Bucculatrix artemisiella	Hofmann....	..	..	..	·25
Cristatella	Wilkinson ..	..	..	..	·25
*Nepticula splendidissima	Hofmann....	..	..	..	·25
* Potentillæ	Hofmann....	..	..	..	·25
* Aceris	Hofmann....	..	..	..	·25
Agrimoniæ	Hofmann....	·50	·25	·25	
Freyella	Hofmann....	..	..	..	·25
minusculella	Hofmann....	..	..	..	·25
Tiliæ	Vaughan	..	..	..	·25
Pomella	Vaughan	..	..	·25	·25

Of the species marked thus * I shall be glad of a further supply of larvæ.

The summary of this Table yields the following results:—

Hofmann	6·25	Scott	1·
Mühlig	5·25	Vaughan	
Frey	3·75	Wailes	
Wilkinson	3·50	Edleston	·75
Boyd	2·	Bond	·25
Winter, W.	1·25	Chappell	
Bruand	1·	Fletcher	
Brown		Gregson	
Millière		Schmid	
Parfitt		Zeller	

The total awards to this time being:—

FREY	20·50	Parfitt	2·75
		Edleston	2·50
		Zeller	2·25
Mühlig	18·	Grabow	2·
Hofmann	13·25	Millière	
Wilkinson	11·50	Wailes	
Schmid	11·	Bond	1·75
Scott	8·50	Harding	1·50
Boyd	7·25	Brockholes	1·25
Douglas	4·50	Brown, T.	
Gregson	3·	Law	

Logan	1·25
Winter, W.	
Bruand	1·
Machin	
Vaughan	
Boll	·75
Miller	
Simmons	

Crump	·50
Beaumont	·25
Chappell	
Drane	
Fletcher	
Newnham	
Shield	
Wildman	

NEW WORKS ON ENTOMOLOGY.

The number of new Entomological publications during the past season has not been oppressively great.

The first in order of appearance was an instalment of a

CATALOGUE OF BRITISH COLEOPTERA.

By G. R. Waterhouse, F.Z.S., &c.

The first part of which (price 2*s.*, or, if printed only on one side for labelling collections, 2*s.* 6*d.*), containing the *Geodephaga*, *Hydradephaga* and *Brachelytra*, was published in April.

The importance of this work can scarcely be overrated, and we are glad to hear there is a prospect of the speedy appearance of a further portion of it. When the Catalogue is complete, probably some Coleopterist will take courage and undertake to supply that other great want, a work describing all our British Beetles.

When the year was further advanced another Catalogue reached us,—

A CATALOGUE OF THE LEPIDOPTERA OF NORTHUMBERLAND AND DURHAM.

By George Wailes, Member of the Entomological Societies of London, France and Stettin.

This Catalogue extends to 46 pages, and only reaches to the end of the *Sphingina*, thus showing clearly that it is not a mere list of names; and truly it contains much valuable local information, whilst the critical remarks at pp. 24—35, establishing the specific identity of *Artaxerxes* and *Agestis*, will be read with interest by all who have studied the range of variation of species.

Mr. Gregson's Catalogue of *The Lepidopterous Insects*

of the District round Liverpool, which has formed a series of Papers in the "Transactions of the Historic Society of Lancashire and Cheshire," has this year been brought to a conclusion.

In September there appeared *the Third Volume of* THE NATURAL HISTORY OF THE TINEINA, containing Elachista, Part I., and Tischeria, Part I. By H. T. Stainton, assisted by Professor Zeller, J. W. Douglas and Professor Frey. *Eight coloured Plates, 8vo. Cloth.* London, John Van Voorst, Paternoster Row; Paris, Deyrolle, Rue de la Monnaie, 19; Berlin, E. S. Mittler und Sohn, Zimmerstrasse, 84, 85. *Price* 12*s.* 6*d.*; 15 *francs*; 4*thlr.* 6 *sgr.*

The appearance of this volume within twelve months of its predecessor is a good omen for the steady and regular publication of the following volumes, and Volume IV., which will contain 24 species of the genus *Coleophora*, is already in a forward state.

During the past twelve months the only important Foreign Entomological Publication that has reached us has been :—

LINNÆA ENTOMOLOGICA. Vol. XI. *Price* 6*s.* Berlin : E. S. Mittler und Sohn.

This volume contains :—

Hagen, a Monograph of the White Ants (*Termites*).

Suffrian on the North American *Cryptocephali*.

Speyer on the probable number of *Lepidoptera* existing on the face of the globe.

Gerstacker on the Chilian species of the genus *Carabus*.

Unfortunately it contains no monograph of any genus of *Tineina*, but we have reason to expect that the next volume will contain a treatise on the genus *Elachista* from the pen of Professor Frey.

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